Recreation Planning and Management through On-Site Social Surveying: Bureau of Land Management- Field Office of Kingman, Arizona

By Samantha D. Woodside

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Approved:

R. Marieke Taney, M.S., Teaching Professor, Chair

Aaron K. Divine, M.S., Teaching Professor

John Lynch, Art. D., Associate Teaching Professor

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Abstract

This paper will showcase the project management position of social surveying on public lands through a government entity. Through quantitative and qualitative data collection, the Bureau of Land Management (BLM) invites public involvement concerning the future decision-making and governance of public lands. Using on-site recreation participant surveying strategies, as well as voluntary electronic follow up in-depth surveys, the BLM can gather general information such as recreational activities, popular use zones on public land, participant demographics, and time spent in specific areas, to better understand the needs and desires of current users of public lands. The voluntary electronic follow-up survey gives people the opportunity to give comments, feedback, concerns, and their personal experiences with time spent on public lands. The data collected will give the researchers a blueprint of the wants and needs of the public to better suit the stakeholders of public lands and give individuals autonomy while attempting to best serve the agency's mission. This project was cooperatively managed and funded through a grant contract between the BLM, University of Alaska Fairbanks (UAF), and Northern Arizona University (NAU). The project utilized undergraduate and graduate students to fulfill required practicum hours while simultaneously creating an opportunity for the students to gain practical field experience, survey collection protocols, data management skills, and work within a government agency. This project started in January of 2020, had a hiatus from March 2020 through October 2021 (due to the Covid-19 pandemic), and was completed in June 2022. During the operational period we obtained 428 completed on-site surveys from five Special Recreation

Management Areas (SRMA). Amongst those 428 surveyors, approximately 249 requested a follow-up survey.

Chapter 1: Introduction

Overview of Public Lands in the US

Public lands in the United States are areas of land and water that are owned by the citizens of the United States and managed by facets of the government. Governing bodies that manage public lands include the federal government, state and/or local government, and sovereign tribal nations. It is important to note that today's public lands include many areas that were and are home to Indigenous Peoples. These people were removed from these lands, colonized, and withdrawn from land ownership. Indigenous lands consisted of migration routes, hunting and foraging areas, ceremonial grounds, and ancestral homelands. It is also important to be aware that not all people who identify the United States as their homeland are included in the decision-making or involvement of United States public lands. Citizenship status (legal voting rights) is the main indicator by which someone can be involved in decisions regarding public lands in the United States. Non-citizens can be involved in public lands through advocacy groups and other forms of public land conversations.

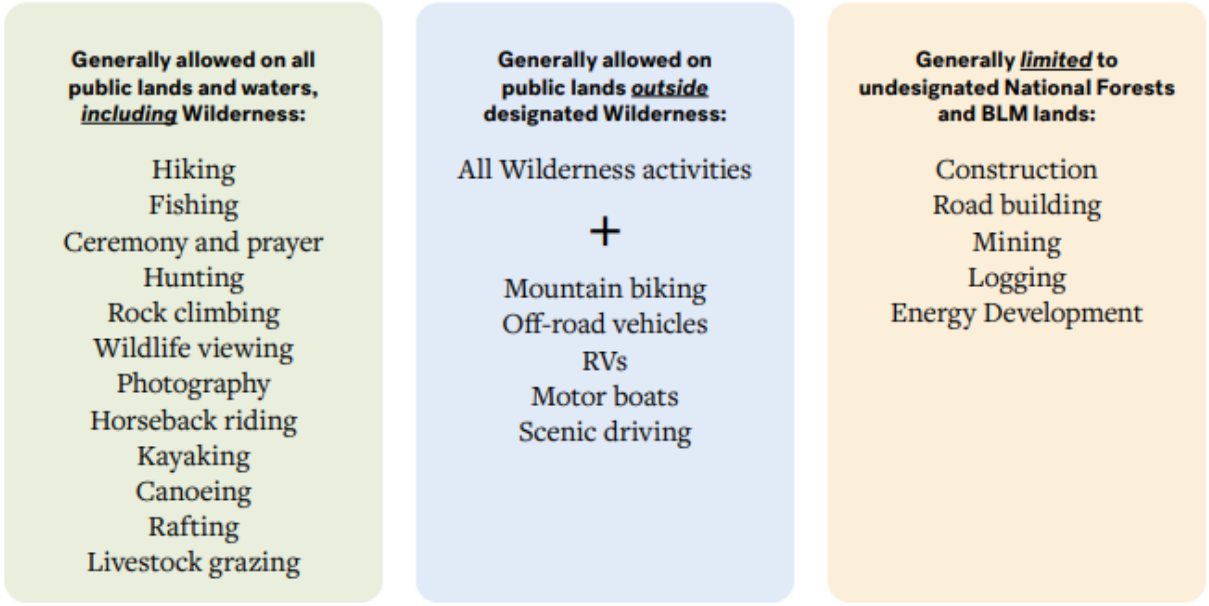
The most common public lands are: National Parks, National Monuments, National Forest and Grasslands, National Wildlife Refuges, National Conservation Lands, National Historic Sites and Parks, National Marine Sanctuaries, National Recreation Areas, National Scenic and Historic Trails, Wild and Scenic Rivers, Wilderness, and Wilderness Study Areas. The federal agencies that manage public lands are as follows: The Department of the Interior, Department of Agriculture,

Department of Commerce, and the Department of Defense are the sectors of the Federal Government that oversee all aspects of public land use. Within these sectors are the Bureau of Land Management (BLM), National Park Service (NPS), United States Forest Service (USFS), and United States Fish and Wildlife Services (USFWS).

Each agency has a different mission concerning the management of public lands. For example, the National Park Service emphasizes recreation and education for current and future generations through the preservation of natural resources and cultural heritage. The Forest Services mission is to support the health of forests and grasslands. Fish and Wildlife Service conserves and protects fish and fish habitat (plants and wildlife) to support the benefits to the United States citizens. The BLM supports diversity and health of United States public lands for current and future generations. Other agencies that are involved in the management of public lands are the Bureau of Indian Affairs (BIA), Bureau of Reclamation (BOR), National Oceanic and Atmospheric Administration (NOAA) and Army Corps of Engineers (ACOE). The mission of the Bureau of Indian Affairs supports opportunity, quality of life, and protection of American Indians, Indian tribes, and Alaska Natives. The Bureau of Reclamation specializes in managing and protecting water resources in support of the United States environment and economy. The National Oceanic and Atmospheric Administration manages marine resources and ecosystems. Army Corps of Engineers supports the strengthening of the Nation's security and emphasizes the reduction of disasters.

The idea of public land is to designate areas that support both environmental and recreational health. Each specified area of public land offers unique activities and

permissible activities. The activities are based on the land managers of that area and the missions they support. Each sector of public land can have different limitations on what activities are approved. Limitations can be seen as restrictions of activities certain times, days, or seasons. Other limitations can be seen through crowd control and permitting systems.



(The wilderness society, n.d.)

Figure 1: Examples of the activity allowances and limitations on BLM land, public land and waters, Wilderness, and National Forests.

Overview of Recreation Ecology

Recreation Ecology is a field of study that focuses on the impacts that recreational activities have on natural areas, with emphasis on protected natural areas. Nature-based tourism has grown exponentially over the past ten years and continues to grow. This growth calls for new areas of study that can document ongoing, new, and projected impacts on natural areas. Recreation Ecology uses factors such as ecological impacts, recreational impacts, and relations between the two. Ecological impacts

consist of but not limited to climate change, water pollution, natural resource extraction, carbon output, waste disposal, overpopulation, deforestation/vegetation destruction, loss of biodiversity, and ocean acidification. Most ecological impacts are directly related to human interference. Cohabitating with the natural environment through recreation, consumption, urban sprawl, repopulation, and development is likely inevitable but should be monitored. The Limits of Acceptable Change System is a process that is used to monitor, document, and suggest appropriate human interference on the natural environment from a recreational standpoint (Anna et al., 2022).

Public Land Management and Decision Making

As mentioned previously, United States public land is used and “owned” by United States citizens and is managed by different entities of government. The government that is responsible for individual sections of public land implements and utilizes practices to make future decisions concerning said public land. The practices regularly involve the input of the people using, engaging, or in proximity of public land. Practices used in decision making concerning public lands are monitoring, focus groups, visitor use and social surveys (both in person and not), and visitor satisfaction surveys. The results of these practices are to inform educated and fair decisions through adaptive management. The specific method of public involvement may differ between each government entity. For purposes within this document, we will focus on the practices used by the BLM.

Project Overview

University of Alaska Fairbanks (UAF) paired with the BLM to conduct a nation-wide grant-funded social survey project. The survey results were calculated and

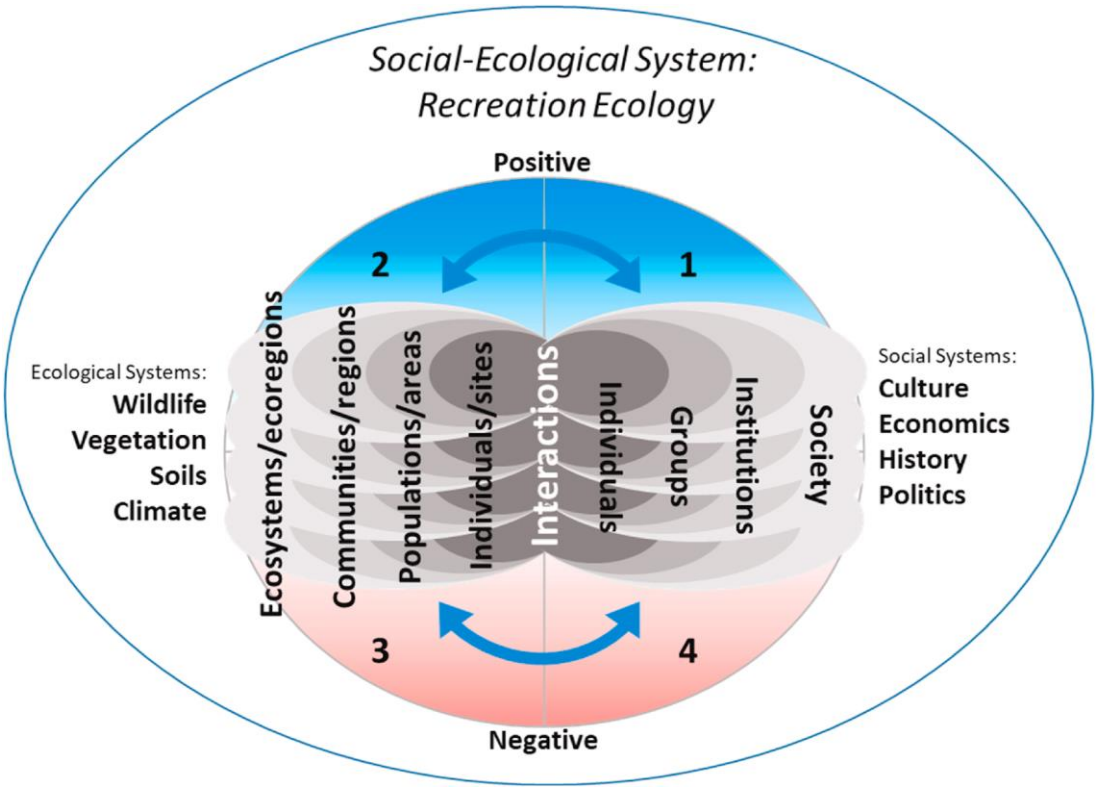
concluded through the methodologies created by the department of Department of Natural Resources and Environment within UAF. To support the BLM/Field office of Kingman, Arizona in their upcoming Resource Management Plan (RMP), University of Fairbanks Alaska created a questionnaire that consists of survey questions and a follow-up survey that were implemented by the BLM. The Resource Management plan will help assist in future decisions while considering the public's interactions and input surrounding Kingman, Arizona's public lands. The social survey implementation required field technicians to make contact with the public on-site in designated zones. During the selected time of this project, field technicians were in numerous locations throughout areas of Kingman managed by the BLM/Kingman Field office. The goal of this survey was to fairly represent the users of these areas. Thus, working in the field with the public gave the BLM pertinent data that was analyzed and will be stored for future reference regarding public land revisions and revitalizations. The samples that came from these social surveys were randomized by choosing different times and locations for the extent of the project. To ensure consistency during this project, the survey process followed the BLMs National Visitor Use Monitoring Process. Within this process is a system of plans and strategies that are utilized within the Department of the Interior when handling changes in public matters, recreational spaces, and natural areas. These systems consist of: Assessment, Inventory, and Monitoring (AIM), Limits of Acceptable Change (LAC), Outcomes Focused Management (OFM), Resource Management Plans (RMP), Recreation Setting Characteristics (RSC), and Outstanding Remarkable Values (ORVs).

Chapter 2: Literature Review

Recreation Ecology

Recreation ecology is the study of understanding and managing the consequences of human interference with natural or semi-natural environments with an emphasis on protected natural areas. Some of the earliest research regarding recreation and detrimental impacts primarily examines walking (or trampling), but research has also investigated the effects of camping, horse riding, off-road vehicles, bikes, and boating (Little, 1991). Nature-based tourism has grown exponentially over the past years and continues to grow. This growth calls for evolving techniques that can document ongoing, new, and projected impacts on natural areas. Little (1991) workshops a more modern approach in recreation ecology and the considerations whilst identifying unhealthy trends using genetic analysis, impact theory frameworks, and the development of predictive techniques for effective environmental management. To this day we can still see Little (1991) techniques being modified by many land-management governing bodies such as the BLM and USFS through: Regular monitoring, focus group involvement, social surveys, governing entity involvement/management, updated regulations, public outreach and education, all whilst keeping visitation at the forefront. Sustaining visitation while minimizing impacts through sustainable design is the goal in creating a balance between recreation use and ecological impacts. Important factors to consider when creating a fair and just relationship between people and place are: Type of use, environmental capacity, timing of use, resilience of area, amount of use (amount of use does not always equate to the amount of impact), spatial distribution of use. Since the time of human evolution, we can trace human effects on the environment.

However, the starkest example of this can be seen during the Industrial Revolution. With the growth of human population and technological advances, over the past two centuries, “humans have disrupted living and nonliving systems everywhere” (Chu et al., 2017), causing ecological impacts (see diagram 1). Even with the apparent ecological impacts expedited by humans starting in the 1700’s, the study of recreation ecology was not established until the 1960’s when Richard Wagner studied the disturbed habitat in North Carolina (Wagner, 1964). Chu et al. (2017) Categorizes ecological impacts as: Environmental degradation, flora, and fauna interferences due to resource depletion, chemical contamination, climate change, vegetation destruction, absence of wildlife due to presence of visitors, pollution to natural water sources, commercial growth, developmental growth, and natural resource extraction. Examples of these impacts can be recognized through firewood collection and burning, vegetation destruction through soil displacement, organic soil compaction, microorganism damage, and invasive species distribution, native plant extraction and trampling, tour company expansions, tour growth in new areas such as ATV, equestrian, e-bike, etc., pack and farm/livestock animal grazing, mining, restrooms, visitor centers, picnic areas, rental stores, parking areas, etc., and trail construction and maintenance. When considering changing or improving a system that surrounds a natural resource and/or natural area, it is important to understand what acceptable change looks like. Protection of a natural area is not meant to completely transform, but to give it the guidance the area and people surrounding that area need to create a safe, natural, and non-intrusive environment. Before any change is made or a protection plan is proposed, Recreation Ecology must be considered.



(Anna et al., 2022)

Figure 2: The relationship between ecological and social systems that make up recreation ecology.

(Arrows depict feedback between social and ecological systems. Numbers depict four quadrants of possible interactions between these systems.)

Limits of Acceptable Change (LAC) System

Published in January 1985, "The Limits of Acceptable Change (LAC) System for Wilderness Planning" marked a significant development in addressing recreational “carrying capacity” or “saturation point” in wilderness areas (Stankey et al., 1985). The first application of the LAC process was documented in 1987 as part of a Forest Plan Amendment/Wilderness Recreation Management Direction (United States Department of Agriculture, 1987). This Management Direction (United States Department of Agriculture, 1987) states:

> This plan provides a uniform system for protecting or restoring the resource and social conditions needed to comply with the Wilderness Act of 1964 and to assure a high- quality experience for each user. Since some of the highest qualities of wilderness cannot be described or reduced to measurable factors, this plan does not deal with these broader values but instead provides a means to protect or restore the conditions necessary to create the values each visitor seeks. It focuses on limiting change to resources that, if overused, would degrade the wilderness experience and defines opportunities for various levels of contact with the natural scene. This plan is not a whole plan for managing the wilderness nor does it in any way replace the need for informed caretakers who understand the land and are stationed in the wilderness.

Since 1985, various related processes addressing recreation carrying capacity have been developed. Examples include the Carrying Capacity Assessment (Shelby et al., 1986), Visitor Impact Management (Graefe et al., 1990), and Visitor Experience and Resource Protection (Hof et al., 1993) processes. More commonly seen in today's land management (BLM and USFS) Limits of Acceptable Change (LAC) is considered the appropriate and acceptable use of human interference concerning a natural recreational setting. To summarize the “Limits of Acceptable Change, Red River Gorge” by the Department of Agriculture (n.d.): LAC is a measurable system that was created once the increase of visitations in a recreation area started to show lasting negative effects. The system is a nine-step process for improving wildland recreation management. These nine steps include establishing areas needed for improvement by understanding

areas concerns and issues (for both legal and organizational policies and purposes), opportunity classes (subunits where conditions differ and diversity of area increases (Measured through indicators)) are defined and described, having an understanding of which management of resource and social conditions are succeeding and can be measured quantitatively, having an inventory of resources and social conditions (recordings, maps, and base information), taking inventory and creating standards of opportunity classes (standards must be achievable), identifying alternatives among opportunity classes (different classes required different types of management), weighing benefits of each alternative and analyze cost (Cost consists of administrative, environmental and visitor impacts), costs and alternatives are evaluated and final decisions are made. Final decisions will be monitored through responsiveness of issues and/or concerns.

National Visitor Use Monitoring Process (BLM)

According to English et al. (2020), in 1995, the USFS reported that there were about “730 million recreation visits annually to National Forest System (NFS) lands, or just under three visits per capita for the U.S. population” Further investigation revealed that there had been no sanctioned monitoring process and that likely, the process to conclude this statistic was enormously incorrect. “The decision was made to scrap the existing system for reporting visitation and start afresh with a science-based process. That process is the National Visitor Use Monitoring (NVUM) program” (English et al., 2020). To better understand the way people, use and enjoy government-managed public lands, the National Visitor Use Monitoring (NVUM) process was utilized. Similar to the USFS NVUM program, this process is used to create a “systematic and

consistent way of monitoring visitors, taking visitor feedback, and better understanding visitor trends. With the information gathered, more informed and public-involved decisions can be made" (English et al., 2020). NVUM process would be used before making decisions concerning recreation planning, resource allocation and management, and infrastructure development. According to the "Overview of the Interagency Visitor Use Management Framework and the Uses of Social Science in its Implementation in the National Park Service" by Cahill et al. (2018), the methods of data collection within the NVUM process consists of:

1. Sampling on specific lands managed by the BLM that are in question for a future project or management-style change.
2. Data collection is utilized by field crews/technicians/volunteers to conduct on-site surveys. These surveys can be used to collect specific information from visitors. Typically, the data collected consists of the number of people, demographics, and the activities the visitor is participating in.
3. Data Analysis would be conducted to better understand trends and patterns within the area that the data was collected.
4. Reporting is a mandatory step that governing bodies must take to be transparent with the public on findings and decisions. It is also helpful in keeping organized when conducting multiple monitoring processes.

Assessment, Inventory, and Monitoring (AIM)

The BLM uses the Assessment, Inventory, and Monitoring (AIM) strategy to ensure a consistent and standardized system for monitoring topics such as natural resources, trends, public relations, and usage. The AIM strategy gives support to policy

action, land uses, and management adaptation and decisions through providing quantitative data. Toevs et al. (2011) highlights the six key components of the AIM strategy: (1) Structured implementation to guide monitoring program development, implementation, and data use for decision makers, (2) Standardized field measurements to allow data comparisons through space and time in support of multiple management decisions, (3) Appropriate sample designs to minimize bias and maximize inference of collected data, (4) Data management and stewardship to ensure data quality, accessibility, and use, (5) Integration with remote sensing to optimize sampling and calibrate continuous map products, and (6) Standard workflows and analysis frameworks for using data.

Questions Addressed the Bureau of Land Management (2012) concerning AIM:

- Are the BLM Land health standards being met and attained?
- What are the current trends and location areas of invasive species and what is the BLM prioritizing within these trends and areas?
- What is most effective when it comes to land treatment?
- Is the BLM being successful at maintaining and improving habitat?
- What is being affected by any of the utilized and/or proposed actions/What could be affected?
- Are the Department of the Interior's guidelines being followed?

Outcomes Focused Management (OFM)

The Bureau of Land Management (n.d.) defines Outcome Focused Management (OFM) as, “An approach to park and recreation management that focuses on the positive outcomes gained from engaging in recreational experiences.” Positive

outcomes within a recreation setting consist of experiences and benefits. Experiences, in this case, come from interpersonal ideas and feelings after participating in a recreational activity. Benefits of experiences within a recreational setting are the results of an enjoyable experience that can benefit individuals both in the long and short term (see diagram 2). To properly identify benefits, we can categorize them into four separate categories: Personal/Individual, Social/Community, Economic, and Environmental. Robertson (2016) studied the relationship between happiness and leisure (see diagram 3) and suggest that:

- Personal/Individual benefits can be identified when recreational participation directly correlates and contributes to one's personal health (physical and mental).
- Social/Community Benefits can be identified through the well-being within a community after participation in a recreational activity. Examples of Community-driven lifestyle choices include: Community involvement and a sense of community, crime reduction, and social skills.
- Economic Benefits within recreation correlates to supporting a diverse economy by supporting new businesses and employment opportunities. Environmental Benefits correlates to recreation supporting outdoor education and environmental protection.

The benefits of OFM is that it comes from individual experiences and populations. This can better represent different groups of people, their priorities, and an individualized look at the benefits of recreation. OFM works best in a smaller setting (i.e. city project vs National project). This community-driven management style is used to

better personalize an area and support a community, economy, and environment through a more individualized perspective (Wollstein, 2022).

(Bureau of Land Management, 2013)

Figure 3: Outcomes-Focused Management structure

(Bureau of Land Management, 2013)

Figure 4: Outdoor experiences linked to everyday health and wellness.

Resource Management Plans (RMP)

Resource Management Plans are documents used by the BLM as a tool to guide management and the use of public lands under United States jurisdiction. These plans are used as a template for making legal decisions surrounding areas of recreation, conservation, grazing, mining, and energy development on public lands.

Key aspects of a BLM Resource Management Plan (RMP) according to the Department of Interior (2016) consist of:

- **Long-term and comprehensive goals** include ongoing analysis of the lands and resources within those goals. Long-term plans could range from 10 to 20 years.
- **Public involvement** to gather input from local communities, trips, environmental organizations, and other various stakeholders. Receiving feedback and suggestions is a crucial part of an RMP.
- **Sustainability and multiple uses** regarding land uses. Keeping sustainability and resource protection at the forefront.
- **Identification of zones** within the plan, each with its own objectives and allowances. Differentiating the zones using zone characteristics and creating map boundaries around each zone.
- **Environmental Impact** must be constantly monitored and analyzed. To ensure no environmental consequences. The BLM has assisted through the National Environmental Policy Act (NEPA) when it comes to analyzing potential environmental consequences.
- **Adaptive management** to support changing information and conditions. Adaptations are constantly evolving and are important for staying up-to-date and politically correct.
- **Implementation and Monitoring** by the BLM includes implementation of plans/projects and monitoring of those implementations. Monitoring progress is essential in achieving progress and the health of the land and visitors that have been impacted by the implementation. Monitoring may result in periodic reviews and adjustments.

Department of Interior Mission

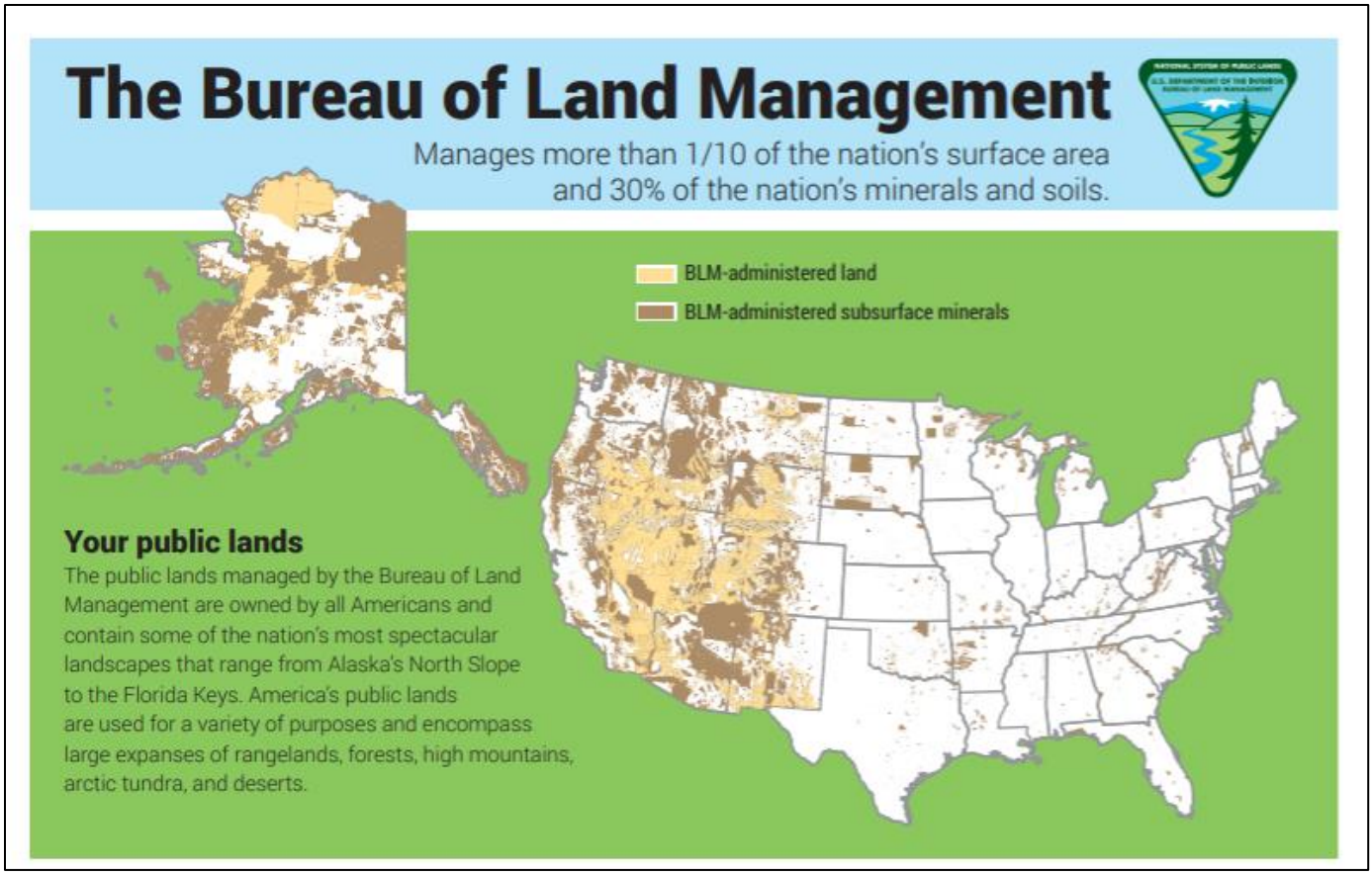
In 1849 a bill was passed to manage the Nations internal affairs. This bill created the Department of Interior. From tasks such as constructing water systems to colonizing freed slaves from Haiti, the Department of Interior was managing an array of national movements (Utley et al., 1989). More noticeable today, the Department of Interior is managing public lands, parks, universities, hospitals, jails, wilderness, etc. Overall, the original idea for developing this department still stands today, which is to support the welfare of the nation's people. More specifically, the mission of the U.S. Department of Interior (n.d.) is to address these topics:

> (1) Development of renewable energy on public lands and waters, utilize clean energy solutions, and restore public lands and waters to benefit current and future generations. (2) Strengthen the government-to-government relationship with sovereign Tribal Nations with the understanding that Tribal sovereignty and self-governance, as well as honoring the federal trust responsibility to Tribal Nations, must be at the forefront of federal Indian policy. (3) Making investments to support the Administration’s goal of creating millions of family-supporting and union jobs. This includes establishing a new Climate Conservation Corps Initiative to put a new generation of Americans to work conserving and restoring public lands and waters, increasing reforestation, increasing carbon sequestration in the agricultural sector, protecting biodiversity, improving access to recreation, and addressing the changing climate. (4) Working to conserve at least 30% of each of our lands and waters by the year 2030. Protect biodiversity,

slow extinction rates, and help leverage natural climate solutions. (5) Centering equity and environmental justice.

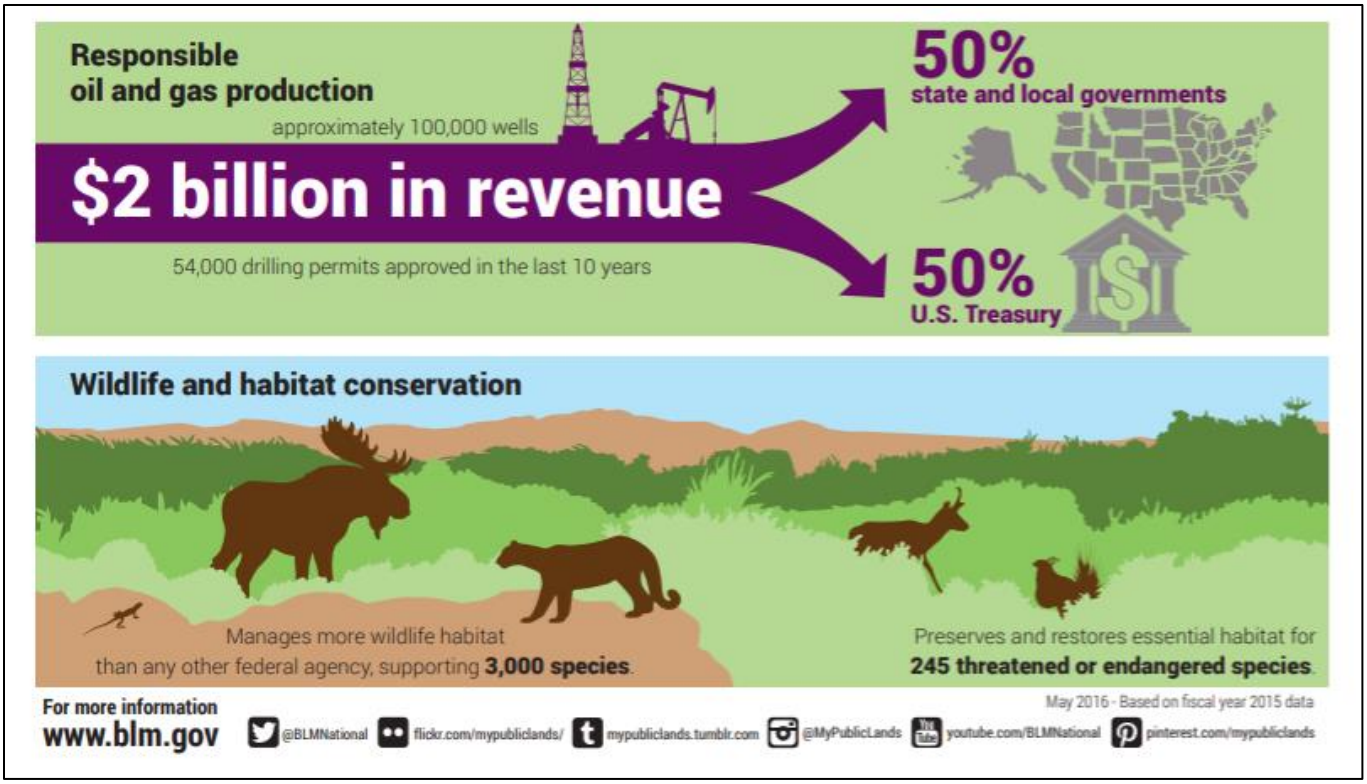
Bureau of Land Management Mission

The Bureau of Land Management (n.d.) prioritizes clean energy, restoration, recreation for all, conservation, and rebuilding the agency. Each priority emphasizes the future of natural areas, community, and equal opportunity. The BLM has been assigned by congress to manage public lands and subsurface minerals (see diagram 4 and 5) to maximize opportunities and preserve for future generations. “We manage public lands to maximize opportunities for commercial, recreational, and conservation activities. This promotes healthy and productive public lands that create jobs in local communities while supporting traditional land uses such as responsible energy development, timber harvesting, grazing, and recreation, including hunting and fishing.” (Bureau of Land Management, n.d.)



(Bureau of Land Management, n.d.)

Figure 5: Area map which shows public lands that are both land and subsurface minerals managed by the BLM.



(Bureau of Land Management, n.d.)

Figure 6: BLM permit approval for responsible oil and gas production and habitat and wildlife conservation management.

History of Use and Management on Public Lands

The use and management of public lands in the United States have evolved over time, reflecting changing societal values, policies, and priorities. The history of public lands use and management can be the Public Lands Foundation (2014) broadly divided into a few key eras:

- **Pre-European Settlement**:
    - Indigenous peoples managed and inhabited the land thousands of years before European settlers arrived. The tribe's land-use and management strategies consisted of hunting, gathering, maintaining ecosystems through controlled burns, etc.
- **Land Grants and Expansions**:

- The 1862 Homestead Act was passed by the U.S. government which encouraged settler expansion and gave land to those who agreed to “improve it”. The Homestead Act was the catalyst to privatizing large amounts of public land. National Archives (n.d.)
- Railroad Land Grants granted large amounts of land to railroad companies to build trail-ways and continue to support the westward settlers. Railroads were a major factor in the growth and industrialization of western United States.

- **National Parks**
  - The late 19th and early 20th century Conservation Movement led by political figures and natural-protection advocates spearheaded establishing legally protected natural areas such as parks and forests.
  - The National Park System was established in 1916 to legally protect natural and historic areas and monuments. This was the start of government entities supporting spaces for future generations.
- **Public Lands Policy and Multiple Uses:**
  - The 1934 Taylor Grazing Act was passed which then created the Division of Grazing to regulate and manage grazing on public lands. The Division of Grazing would later be what we now know as the BLM.
  - The Taylor Grazing Act was expanded in 1976 to the Federal Land Policy and Management Act (FLPMA). This act further managed public lands within the realm of sustainable and multiple uses such as recreation, grazing, mining, and conservation.

- **Environmental Movements and New Regulations**:
    - In the 60's and 70's significant environmental legislation was put into place such as the National Environmental Policy Act (NEPA) and the Clean Air Act. Both of these laws would ensure stricture environmental regulations and more controlled assessments on regulation adherence. Ann E. Chapman (n.d.)
    - In 1964 the Wilderness Act was passed. This was another protection act that designated certain public lands as wilderness areas. Wilderness areas come with regulations that support preservation. Ann E. Chapman (n.d.)
- **Current Era:**
    - Public lands are now supported and managed by multiple stakeholders such as environmentalists, visitor users, recreational professionals, farmers and ranchers, and energy companies.

Current challenges of public lands are mostly related to climate change, political policy, underfunded public-land management, increased visitation, habitat degradation, and competing land uses. Management strategies are continuously evolving to address arising issues.

National Visitor Use Monitoring and Social Surveys

Data Gathering Methods and Techniques according to U.S. Department of Health and Human Services (2006):

- Focus Group/Public Discussions (See Appendix A)
    - Public announcements regarding topic, time, date, and meeting place

    - Small groups that typically consist of those that live in or around the area that is being emphasized in topic discussion.
    - Interview-like questions are presented to create a uniformed questions, answers, and discussion platform.
    - Quantitative and qualitative data is collected through encouraging participants to share their honest opinions, values, and preferences regarding the topic.
    - Creates an atmosphere that encourages common interests and community participation.
- Scoping Meetings:
    - Public involvement looking for more specifics regarding specific areas, recreational purposes, and preferences.
    - Gives the BLM a more specific idea regarding the next steps when a proposed project arises.
- Surveys and Questionnaires:
    - A good option for collecting massive amounts of data from a broader range of people.
    - The complexity of these surveys and questionnaire could be as simple or as in-depth as necessary.
    - Surveys and Questionnaires can come in a variety of forms such as: In person, telephone, email, and online.

Chapter 3: Practicum Project Description

National Project Background

This project started with the partnership of the BLM/Las Cruces District Office and the University of Alaska Fairbanks (UAF). The Las Cruces BLM was beginning to implement an Outcome Focused Management (OFM) style within a Resource Management Plan (RMP). This RMP would begin focusing on the lands directly managed by the Las Cruces BLM. The UAF supported this RMP by partnering up with New Mexico State University to gather data from visitors using the Organ Mountains-Desert Peaks National Monument (OMDPNM). This data mostly consisted of characteristics of the monument and its visitors. Such information collected consisted of: Specific locations and sublocations, desired experiences and outcomes, desired experience accomplishments and outcomes, input on site details and conditions, and desired levels of Recreation Setting Characteristics (RSC). The data collected from the OMDPNM would be the information they needed to utilize OFM. With this RMP in place and backed by the UAF, this was the start of a template that could be used on (BLM) public lands across the country.

What is the National Project

The project is to help support the BLM in a long-term OFM project that would help shape future decisions of public land managed by the BLM. Utilizing the UAF students and professors to create a fair, just, and legal survey system supports benefits both the BLM, the university, and the community that has a direct connection with users of the land. The national project works by pooling as many land-use visitors as possible within a set amount of time. These nation-wide projects followed the same framework across BLM public lands. The BLM is responsible for staffing the field technicians, providing the necessary safety gear, vehicles, maps, times, locations, in-field

management, etc. The UAF is responsible for the survey and survey questions, implementation practices, necessary revisions, data analysis, etc.

Reason for the National Project

To increase effectiveness in data collection and data management, the BLM created a Core Team, an Oversight Team, and a local, regional, and national group to better focus on monitoring activities on public land. These teams would utilize a field survey to better understand the trends, demographics, and overall visitor use in certain areas managed by the BLM. The field surveys could then be carefully analyzed to pinpoint potential problems and imbalances. The vetted field survey would be carefully crafted from experts in the field of recreational social surveying to then be used as a tool to identify opportunities and increase effectiveness in specific areas. This process would follow the Assessment, Inventory, and monitoring (AIM) strategy. The Assistant Director of Renewable Resources and Planning (2012) explains that the benefits of the AIM strategy "benefit all levels of the BLM by establishing a framework for collection of monitoring data that is consistent and compatible across scales, programs, and administrative boundaries. Implementation of the AIM Strategy will provide defensible, quantitative data to inform decisions and allows data to be collected once and used many times for many purposes." These field surveys would work alongside remote imagery to better improve vegetation mapping, detect changes and disturbances in vegetation, develop models to predict stressors, and to have a method of collection that is consistent. The nationwide project application would ideally solidify areas of money and employment allocation, create updated training requirements, work products, timelines, a communication outline, cross-program guidance, and performance

measures. Assistant Director of Renewable Resources and Planning (2012). Most importantly, this national project would support a more standardized strategy to stay up to date on the health of public lands and the visitors and stakeholders of these lands.

Kingman Public Lands- BLM

The BLM/Kingman Field Office, located in Kingman, Arizona, is one of the many field offices responsible for managing 2.4 million acres of public lands within Arizona. The Kingman Field Office is tasked with managing and overseeing the use of public lands in northwestern Arizona, covering a diverse landscape that includes desert, mountains, canyons, and a variety of natural and cultural resources.

Key characteristics of the Kingman BLM Field Office include:

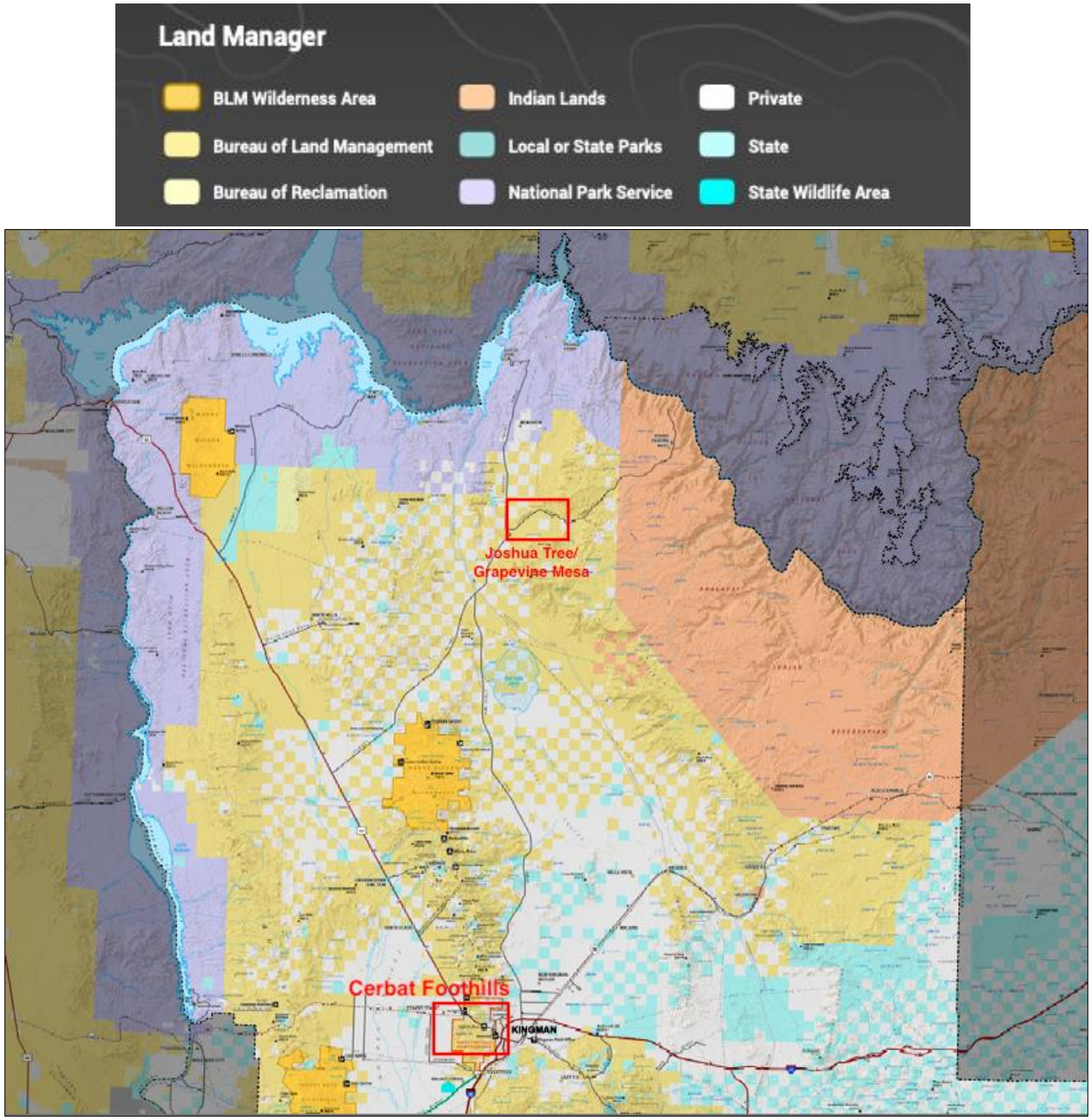
- Geographically: The Kingman Field Office's jurisdiction oversees a significant portion of northwestern Arizona, including portions of Mohave, Yavapai, and La Paz Counties. The region includes portions of the Sonoran Desert, the Hualapai Mountains, the Black Mountains, and the Colorado River. Bureau of Land Management. (n.d.)
    - The BLM Wilderness areas consist of Arrastra Mountain Wilderness, Aubrey Peak Wilderness, Mount Nutt Wilderness, Mount Tipton Wilderness, Mount Wilson Wilderness, Tres Alamos Wilderness, Upper Burro Creek Wilderness, Wabayuma Peak Wilderness, and Warm Springs Wilderness. Bureau of Land Management. (n.d.)
- Management Responsibilities: The Kingman BLM Field Office is responsible for managing public lands for a wide range of purposes, such as outdoor recreation, wildlife conservation, grazing, mineral development, and cultural

resource protection. This includes managing recreational opportunities like hiking, camping, and off-highway vehicle (OHV) use.

- Recreational Opportunities: The region offers various recreational opportunities, including popular areas like the Hualapai Mountains, Lake Havasu, and the Bill Williams River National Wildlife Refuge. These areas attract visitors for hiking, boating, fishing, wildlife viewing, and more.
- Cultural and Historical Sites: The area managed by the Kingman BLM Field Office contains numerous cultural and historical sites, including petroglyphs, archaeological remnants, and other culturally significant locations. Protecting and preserving these sites is a priority for the BLM.
- Collaboration: The Kingman Field Office collaborates with various stakeholders, including local communities, tribal nations, outdoor enthusiasts, conservation organizations, and industries operating on public lands, to make informed decisions about land use and resource management.
- Environmental Stewardship: The BLM in this region, like other field offices, adheres to federal environmental laws and regulations, including the National Environmental Policy Act (NEPA), when making land management decisions. They also engage in initiatives to protect and conserve the natural environment and address issues like invasive species and wildfire management.
- Land Use Planning: The BLM in Kingman engages in land use planning activities that involve public participation and input to determine how public

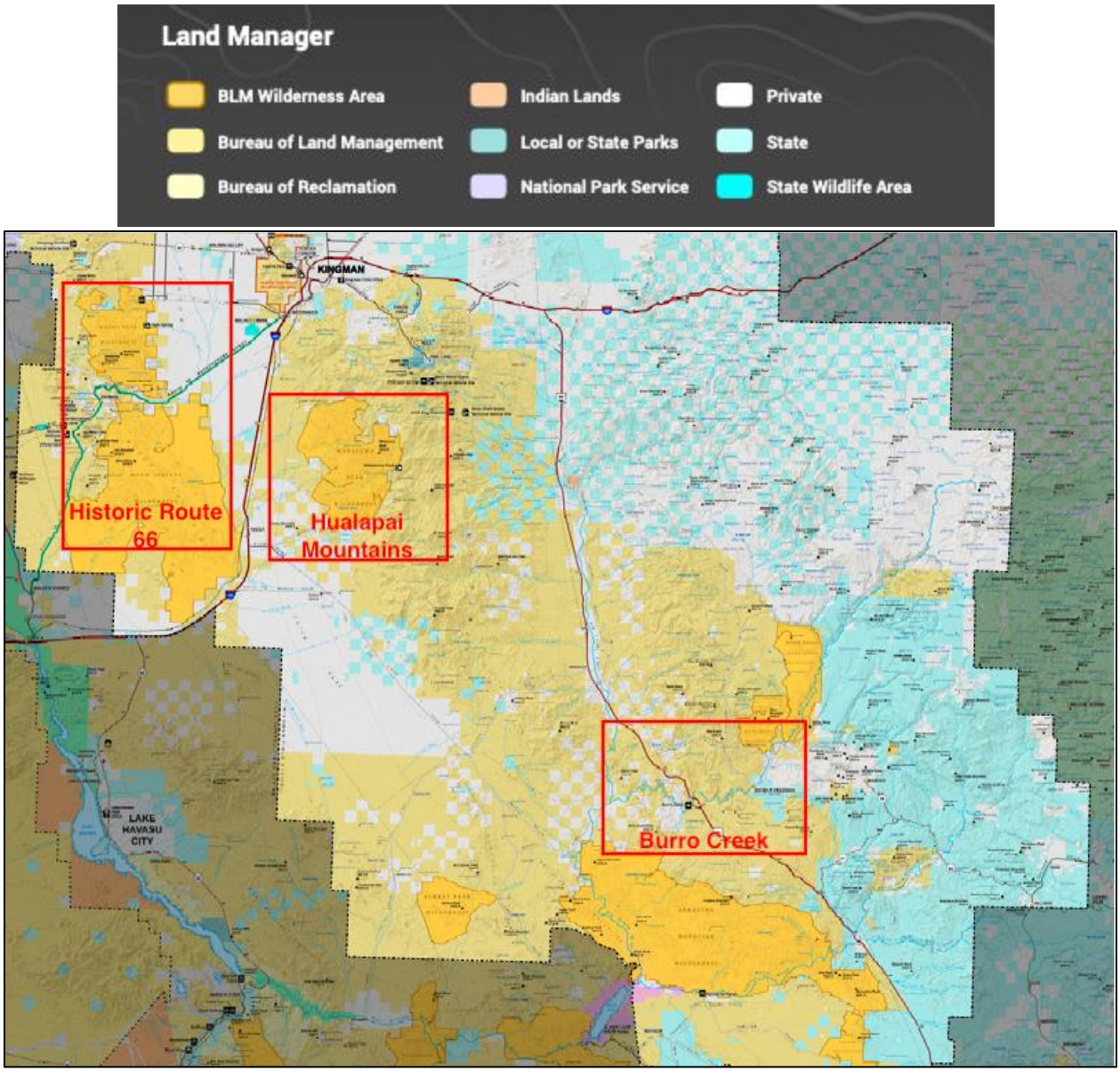
lands should be managed, taking into consideration the stakeholders' interests and conservation goals.

The Kingman BLM Field Office plays a crucial role in ensuring the responsible and sustainable management of public lands in its jurisdiction, while also providing opportunities for outdoor recreation, resource utilization, and conservation in the diverse landscapes of northwestern Arizona.



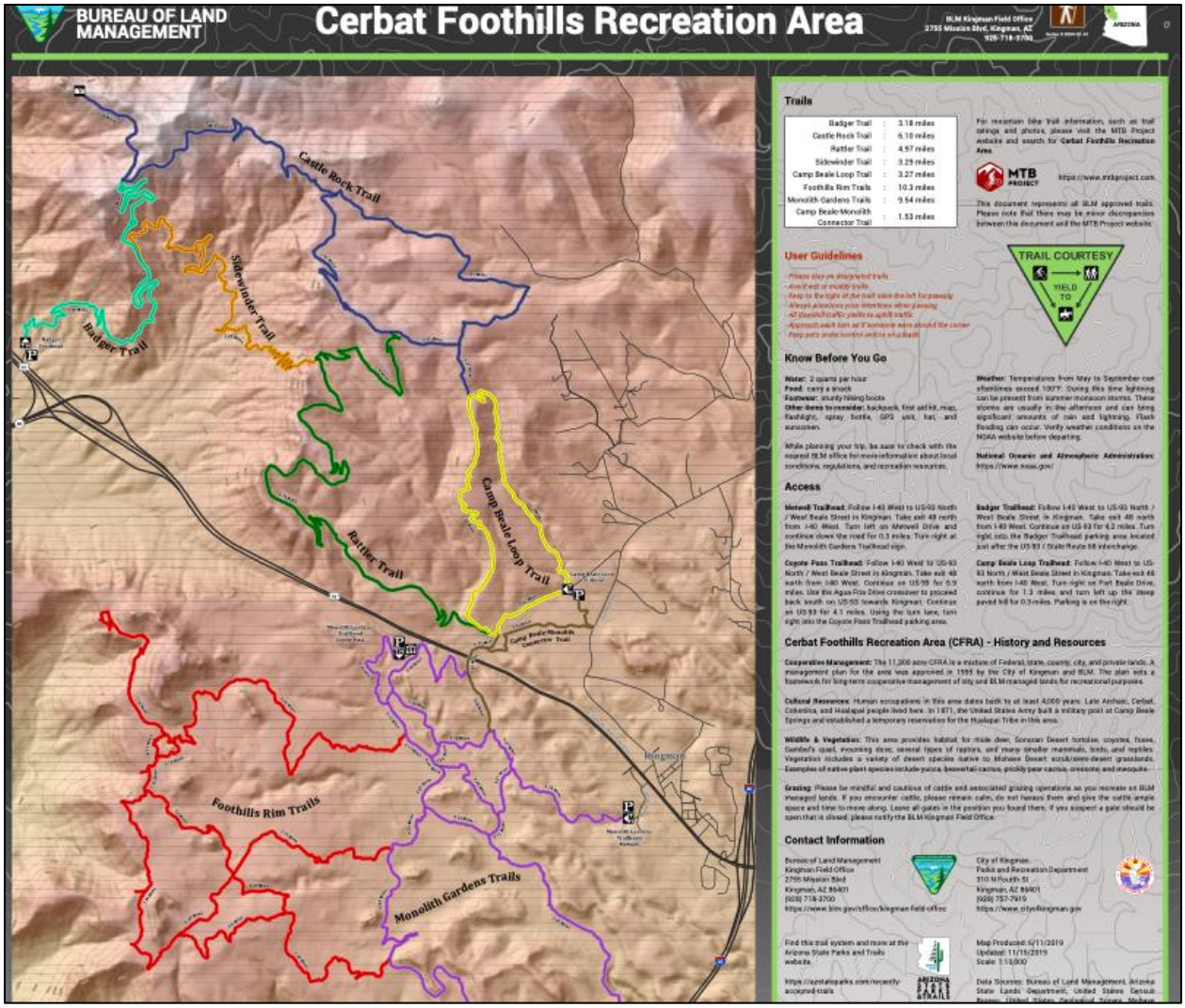
(Bureau of Land Management, 2019). Area edits: Sam Woodside

Figure 7: North half of Kingman Field office map with key and survey zones.



(Map: Bureau of Land Management, 2019). Area edits: Sam Woodside

Figure 8: South half of Kingman Field office map with key and survey zones.



(Bureau of Land Management, 2019)

Figure 9: Example of on-site public map of the Cerbat Foothills recreation area.

Kingman Field Office Project Involvement (Focus Groups and Social Surveys)

Once UAF and the Kingman BLM field off had arranged a project plan, the BLM then reached out to Northern Arizona University (NAU) to fill the field technician positions (see appendix C). The hiring process was lengthy and thorough to ensure compliance with university and government hiring regulations. Once the small group of NAU new hires were attained, the team would create a surveying schedule (see appendix D). This schedule ensured that all areas that the BLM had chosen to survey would be evenly represented. The areas within the Kingman BLM public land consisted

of Cerbat Foothills, Burro Creek, Historic 66, Hualapai Mountains, and Joshua Tree. Within those areas were sub areas or “zones” to narrow down visitor’s locations (see appendix E). Before surveying at the correct survey site for the day, the technicians were responsible for checking out the proper equipment from the BLM Kingman field office. Equipment such as capable vehicles, satellite communication devices, proper signage and safety gear, survey material such as paper copies of survey, paper follow-up surveys, iPads, field logs, number logs, tables, chairs, etc. The optional on-site surveys were available to anyone who was using the public land that the technicians were surveying that day. The student technician's set-up in designated and popular hiking, biking, walking, birding, rock-hounding, camping, and OHV areas. These areas have been purposefully chosen in advance with intentions of evenly distributed hours amongst each survey area. The survey was administered by the technicians and would take approximately 5 minutes to complete. Following the initial survey (see appendix G), participants had an option to participate in the follow-up survey (see appendix H) which could be completed by a mail-in version or an emailed version. This survey has a more in-depth approach to the visitor's expectations, experience, outcomes, and suggestions. Direct management for the Kingman project consisted of Matt Driscoll (BLM Kingman representative), Peter Fix (University of Alaska Fairbanks representative), and Aaron Divine (Northern Arizona University representative). While the field technicians were responsible for contacting land-use visitors and collecting social surveys, the BLM was responsible for using other data-collection strategies such as focus groups and public outreach. Focus groups invite the Kingman community to come together and discuss possible problems and resolutions.

Photo by: Aaron Divine (2022) NAU Teaching Professor in Parks and Recreation Management

Figure 10: Example of field technician obtaining a social survey from recreators (cycling) at an on-site location.

Photo by: R. Marieke Taney (2022) NAU Teaching Professor in Parks and Recreation Management

Figure 11: Example of field technician obtaining a social survey from recreators (OHV) at an on-site location.

Photo by: Aaron Divine (2022) NAU Teaching Professor in Parks and Recreation Management

Figure 12: Example of signage used at an on-site survey location. Used for both safety and visual direction.

3.1 Methodologies

The methods used for this project consisted of social surveys (both in-person and electronic), sampling, and focus groups. These are valuable methods for collecting data regarding how people use and interact with public lands, as well as their opinions and preferences.

Considerations for conducting social surveys on BLM land:

- Survey Design:
    - Define Objectives: Clearly state the research objectives and the specific information you aim to gather through the survey.

    - Questionnaire Development: Develop a structured questionnaire with clear and unbiased questions. Ensure the questions are relevant to the objectives.
- Sampling:
    - Random Sampling: Use random sampling techniques to select a representative sample of respondents.
    - Geographic Representation: If studying a specific BLM area, ensure the sample includes respondents from various geographic locations within that area.
- Data Collection Methods:
    - In-Person Surveys: Conduct face-to-face interviews with respondents at BLM determined sites, visitor centers, or trailheads. Surveys were administered utilizing ARCGIS/Survery123 on electronic field tablets.
    - Online Follow-up Surveys: Create web-based surveys and distributed by UAF via emailed web links to secured survey site.
    - Mail Follow-up Surveys: Optional paper surveys for those who wanted to participate but did not want to use electronic versions.
- Survey Administration:
    - Consent: Ensure that participants understand the purpose of the survey and that their responses will be kept confidential.
    - Interviewer Training: If conducting in-person surveys, ensure interviewers are trained in data collection techniques and specific applications.

    - Data Collection Period: Specify the period during which the survey will be conducted to capture seasonal variations in land use. A field log assisted in seeing trends around weather (see appendix F)
- Data Analysis:
    - Excel spreadsheet review from ARCGIS/Survey123 downloads by NAU researchers to assure data validation prior to sending to UAF.
    - Quantitative Analysis: Use software to analyze survey data, as determined by UAF researchers.
    - Qualitative Analysis: If applicable, analyze open-ended responses to identify themes and patterns.
- Reporting and Interpretation:
    - Present Findings: Prepare a comprehensive report or presentation summarizing survey findings, including key insights and recommendations.
    - Stakeholder Engagement: Share survey results with BLM staff, stakeholders, and the public to inform land management decisions to foster the relationship with the public.
- Ethical Considerations:
    - Anonymity: Assure respondents that their responses will be kept confidential and that their identities will not be disclosed.
    - Informed Consent: Obtain informed consent from survey participants, explaining the purpose and use of the data.
- Public Involvement:

    - Engage Stakeholders: Consider involving stakeholders and the local community in the survey process to gain a broader perspective on land use and management issues.
    - Collaborate: Collaborate with local authorities, nonprofit organizations, and academia to enhance the survey's quality and scope.
- Data Validation:
    - Cross-check Data: Verify the data collected with other sources, such as BLM records or environmental data, to ensure accuracy.

Additional factors according to the BLM when considering a survey/questionnaire methodology according to the Bureau of Land Management (2013):

- Any survey instrument and methodology done by or for the BLM must be approved in advance through an information collection request to the Office of Management and Budget.
- The BLM can work in conjunction with universities and other agencies that may need or want similar data.
- More in-depth studies are sometimes desired for heavily visited or high-profile recreation attractions.
- Onsite visitor surveys provide an opportunity to collect nonresident data.
- Surveys and questionnaires must be properly designed and administered.
- Data collected in small group discussions should be used to determine the need for a subsequent visitor survey. If a visitor survey is desired, use the data collected in small group discussions to design the questionnaire.

- Depending on the specialist's knowledge of the area and activities, informal discussions and professional knowledge may be used to help prepare questionnaires.
- When preparing survey questions, use the Experience and Benefit Checklist (See appendix B)

Chapter 4: Implications of Project

After this project was concluded, the field technicians and the BLM/Kingman field office team pooled together the on-site data they collected and sent it to Peter Fix of UAF. Peter then processed the data through the application Survey123, corrected any obvious inconsistencies (see table 1), created a field-key (see table 2 and 3), and organized and charted the on-site data as public data (see table 4).

Table 1**:** Corrected Inconsistencies

Corrected Inconsistencies:
1) In some participant surveys the "primary zone" variable was not selected, however, they indicated that they visited a sub-primary zone. To make the data more accurate, a "primary zone" must be selected. An educational assumption was agreed upon that the sub-zone was indeed meant to be the primary zone. The variables were corrected accordingly.
2) In some participant surveys the "primary activity" variable was not selected, however, a sub-activity was indicated. To make the data more accurate, a "primary activity" must be selected. An educational assumption was agreed upon that the sub-activity was indeed meant to be the "primary activity". The variables were corrected accordingly.

Sam Woodside (2023)

Table 2**:** Field Key

Chart includes Special Recreation Management Area (SRMA), Destination, Group Type, Gender, and Primary Zone.

Zones Visited Values: 0 = Did not visit zone, 1 = Visited zone, -8 = Was not in respective SMRA, -9 = Was in respective SRMA

Primary Zone Value: -9 = No response

Year Values: 0 = 2020, 1 = 2022

A	B	C	D	E	F
Field	**Value**	**Description**			
O_SRMA	BurroCreek	Burro Creek SRMA		YEAR 0 = 2020; 1 = 2022	
	CerbatFoothills	Cerbat Foothills SRMA			
	Historic66	Historic Route 66 SRMA			
	HualapaiMtn	Hualapai Mountains SRMA			
	JoshuaTree	Joshua Tree SRMA			
O_DESTINATION	MainDestination	This area is the main destination for this trip.			
	MultipleOtherDestinations	This area is one of multiple other destinations for the trip.			
O_GROUPTYPE	VisitingAlone	I am visiting alone			
	FamilyOne	Family only			
	FriendsOnly	Friends only			
	FamilyAndFriends	Family and friends			
	OrganizedGroup	Organized Group (e.g. church, scouts, etc.)			
	CommercialGroup	Commercially outfitted group			
O_GENDER	Male	Male			
	Female	Female			
O_PRIME_ZONE	1	Zone 1 - Arrastra Mountain/Wayside		Zones visited Value Label	
	2	Zone 2 - Peoples (Peeples) Canyon		0 = Did not visit zone	
	3	Zone 3 - Aubrey Peak/Signal Peak		1 = Visited Zone	
	4	Zone 4 - 17 Mile Rd/Signal Rd		-8 = Was not in the respec	
	5	Zone 5 - Nothing/Suicide Wash		-9 = Was in the respectie	
	6	Zone 6 - Burro Creek Crossing Rd/6 Mile Crossing			
	7	Zone 7 - Bagdad/Scratch & Jerky Canyons		Note, the zones visited fo	
	8	Zone 8 - Sycamore Camp/Goodwin Mesa		However, there is overlap	
	9	Zone 9 - Cedar/Dutch Flat			
	10	Zone 10 - Boriana Mine/Walnut Creek		PRIME_ZONE	
	11	Zone 11 - Blake Ranch Rd/Kabba Mine		-9 = No response	

Peter Fix: UAF Department Chair & Professor of Outdoor Recreation Management (2022)

Table 3: Field Key

Chart includes Primary Activity

Primary Activity Values: 0 = Did not participate, 1 = Participated, -9 = Did not respond

A	B	C	D	E	F
O_PRIME_ACTIV	1	Backpacking (Overnight)		Activity Participation val	
	2	Biking		0 = did not participate in	
	3	Bird Watching		1 = participated in activit	
	4	Camping		-9 = did not respond to th	
	5	Day Hiking			
	6	Driving And Sightseeing			
	7	Fishing			
	8	Geocaching			
	9	Horseback Riding			
	10	Hunting			
	11	OHV Riding			
	12	Photography			
	13	Picnicking			
	14	Rafting			
	15	Recreational Gold Panning			
	16	Rock Climbing			
	17	Rockhounding/MineralCollection			
	18	Target Shooting			
	19	Technical 4WD			
	20	Trail Running			
	21	Viewing Cultural Sites			
	22	Viewing Joshua Trees			
	23	Visiting Historical Sites			
	24	Walking			
	25	Watching Wildlife			
	26	Other			

Peter Fix: UAF Department Chair & Professor of Outdoor Recreation Management (2022)

Table 4**:** Summarized version of the processed data (start of data table)

Included: Column A = Year (see table 2), Column B = Individual ID, Column C = Date, Column D = Time, Column E = SRMA

	A	B	C	D	E
1	YEAR	O_ID	O_DATE	O_TIME	O_SRMA
2	0.00	1114	2/5/20 19:00	16:21	CerbatFoothills
3	0.00	2	2/7/20 19:00	14:35	BurroCreek
4	0.00	1	2/7/20 19:00	11:44	BurroCreek
5	0.00	1003	2/8/20 19:00	09:59	BurroCreek
6	0.00	1005	2/8/20 19:00	11:26	BurroCreek
7	0.00	1002	2/8/20 19:00	09:38	BurroCreek
8	0.00	1009	2/8/20 19:00	15:59	BurroCreek
9	0.00	4	2/8/20 19:00	08:43	BurroCreek
10	0.00	6	2/8/20 19:00	10:54	BurroCreek
11	0.00	5	2/8/20 19:00	08:59	BurroCreek
12	0.00	1001	2/8/20 19:00	08:41	BurroCreek
13	0.00	1004	2/8/20 19:00	11:03	BurroCreek
14	0.00	1007	2/8/20 19:00	12:19	BurroCreek
15	0.00	1008	2/8/20 19:00	15:45	BurroCreek
16	0.00	8	2/8/20 19:00	15:57	BurroCreek
17	0.00	3	2/8/20 19:00	08:24	BurroCreek
18	0.00	7	2/8/20 19:00	13:51	BurroCreek
19	0.00	1011	2/9/20 19:00	11:05	BurroCreek
20	0.00	1012	2/9/20 19:00	11:43	BurroCreek
21	0.00	1015	2/9/20 19:00	13:57	BurroCreek
22	0.00	1017	2/9/20 19:00	15:15	BurroCreek

Peter Fix: UAF Department Chair & Professor of Outdoor Recreation Management (2022)

Table 5**:** Summarized version of the processed data (end of data table)

Included: Column A = Year (see table 2), Column B = Individual ID, Column C = Date, Column D = Time, Column E = SRMA

	A	B	C	D	E
406	1.00	3052	4/9/22 19:00	13:34	HualapaiMtn
407	1.00	3044	4/9/22 19:00	08:52	HualapaiMtn
408	1.00	3046	4/9/22 19:00	10:45	HualapaiMtn
409	1.00	3053	4/9/22 19:00	14:54	HualapaiMtn
410	1.00	3048	4/9/22 19:00	11:17	HualapaiMtn
411	1.00	1212	4/29/22 19:00	13:18	HualapaiMtn
412	1.00	1210	4/29/22 19:00	11:48	HualapaiMtn
413	1.00	1211	4/29/22 19:00	12:07	HualapaiMtn
414	1.00	120	4/30/22 19:00	08:53	HualapaiMtn
415	1.00	124	4/30/22 19:00	10:57	HualapaiMtn
416	1.00	121	4/30/22 19:00	09:43	HualapaiMtn
417	1.00	126	4/30/22 19:00	11:29	HualapaiMtn
418	1.00	127	4/30/22 19:00	11:49	HualapaiMtn
419	1.00	122	4/30/22 19:00	10:04	HualapaiMtn
420	1.00	123	4/30/22 19:00	10:30	HualapaiMtn
421	1.00	125	4/30/22 19:00	11:12	HualapaiMtn
422	1.00	128	5/27/22 19:00	14:39	HualapaiMtn
423	1.00	130	5/28/22 19:00	10:15	HualapaiMtn
424	1.00	129	5/28/22 19:00	10:05	HualapaiMtn
425	1.00	131	5/28/22 19:00	10:53	HualapaiMtn
426	1.00	133	6/3/22 19:00	11:13	HualapaiMtn
427	1.00	132	6/3/22 19:00	10:25	HualapaiMtn
428	1.00	134	6/4/22 19:00	09:47	HualapaiMtn
429	1.00	82	1/29/23 19:00	09:25	CerbatFoothills

Peter Fix: UAF Department Chair & Professor of Outdoor Recreation Management (2022)

Approximate Key Data Outputs:

The purpose of this project is to better understand and support the BLM decision making and project management. The data can be organized in many ways to have a better understanding of people and place. For example, the data can be collected for certain SRMA's, certain demographics, and high use/low use participation areas. The goal of the analyzed data is to be able to organize and identify potential consequences, imbalances, effects, and outcomes. For the purpose of this paper, I will identify a few key data outputs:

- Total number of participants through 2020 - 2022: 429
- 2020 Response rate, completed surveys, refusals, contacts 2021 (see table 6):
    - Burro Creek SRMA
        - Contacts: 70
        - Refusals: 8
        - Completed surveys: 62
        - Response rate: 89%
    - Cerbat Foothills SRMA
        - Contacts: 134
        - Refusals: 9
        - Completed surveys: 125
        - Response rate: 93%
    - Historic Route 66 SRMA
        - Contacts: 36
        - Refusals: 3

        - Completed surveys: 33
        - Response rate: 92%
    - Hualapai Mountains: N/A for 2020
    - Joshua Tree:
        - Contacts: 31
        - Refusals: 6
        - Completed surveys: 25
        - Response rate: 81%
    - Total:
        - Contacts: 271
        - Refusals: 26
        - Completed surveys: 245
        - Response rate: 90%
- Race % (out of 182 participants in contacted (only 2022)):
    - No Answer: 2%
    - White: 90%
    - Asian: 1%
    - Black/African: 1%
    - Latin American: 1%
    - White/Black: .05%
    - Native Hawaiian: 1%
    - Native/White: .05%
    - Asian/Black .05%

- Asian/White: .01%

- Age/Year Born % (total participants contacted):
  - 1935-1955: 25%
  - 1956-1975: 45%
  - 1976-1995: 26%
  - 1996-2023: 2%

Table 6: Bureau of Land Management Kingman Field Office Onsite Survey Contact, Refusals, and Completed Surveys

Special Recreation M	Contacts	Refusals	Completed surveys	Response Rate		
Burro Creek	70	8	62	89%		
Cerbat Foothills	134	9	125	93%		
Historic Route 66	36	3	33	92%		
Hualapai Mountains	-	-	-	-	-	
Joshua Tree	31	6	25	81%		
All Respondents	271	26	245	90%		
Burro Creek SRMA						
17 Mile	10	1	9	90%		
6 Mile	1	0	1	100%		
Burro Creek Campgrc	4	0	4	100%		
Burro Creek Crossing	34	5	29	85%		
Signal Rd	21	2	19	91%		
Cerbat Foothills SRMA						
Badger TH	11	0	11	100%		
Big Wash Rd	3	1	2	67%		
Camp Beale TH	53	2	51	96%		

Joe Cunningham- Geography, Planning, and Recreation student and field technician (2020)

Table 7**:** Response rate, completed surveys, refusals, contacts, and SMRA (2021)

Coyote Pass TH	44	5	39	89%
Metwell TH	23	1	22	96%
Historic Route 66 SRMA				
El Rodeo	18	1	17	94%
Silver Creek E	3	0	3	100%
Silver Creek W	15	2	13	87%
Joshua Tree SRMA				
Hells Canyon	3	1	2	67%
Joshua Tree	28	3	25	82%

Joe Cunningham- Geography, Planning, and Recreation student and field technician (2020)

Chapter 5: Project Limitations and Suggestions

The processed data of this project have solidified my concerns regarding apparent limitations. The noted limitations are as follows: (1) lack of involvement and received data from the surrounding tribal members and Native-identifying people, (2) lack of representation from minorities and certain age groups, (3) a convenience sampling model, (4) human error in surveying techniques, (5) limited and outdated language surrounding the survey questions.

After working as a field technician and on the project-management team, my perceived limitations and suggestions are as follows:

1) Limitation: **Lack of involvement and representation from the surrounding tribal members and Native-identifying people.** Kingman, Arizona and the surrounding area is considered a homeland to Native tribes such as the Haulapai, Havasupai and Mohave. The data from this project reported approximately 1% participation rate from Native-identifying people.

   Suggestions:

   - **Cultural-Sensitive Training** within the BLM and supporting entities. This training should emphasize the importance of understanding and respecting cultural differences. This can help create an environment that fosters trust and encourages open communication.
   - **Establish Trust and Relationships** with the surrounding tribes. The BLM could create a relationship with the tribes, tribal leaders, community members, and local organizations by holding specific

Native focus groups as well as bringing the focus groups onto the surrounding Tribal Reservations. This would demonstrate a commitment regarding the involvement of the surrounding areas and people, thus creating a more trusting and comfortable environment and relationship.

- **Inclusive Research Design** which could involve tribal members in the research design phase to ensure that data collection methods are culturally appropriate. Collaboratively develop research questions, methodologies, and tools that align with the community's values and preferences.
- **Acknowledge** the Native Lands that are being managed by the BLM. Also acknowledge their contributions in research and reports. This not only demonstrates respect but also highlights the importance of their involvement.

2) Limitation: **Lack of involvement and representation from minority and age groups.** The approximated data showed that about 90% of the survey participants were white and 45% were born between the years of 1956-1975. The lack of diversity in race and age groups is a concerning factor when looking at the overall usage of public land.

Suggestions:

- **Diversity and Inclusion Policies** within the BLM, supporting entities, and public land users. These policies should emphasize the importance of

representation from all groups including (but not limited to) ethnic, racial, gender, age, and LGBTQ+ communities.

- **Partner with community-based organizations** before, during, and after project implementation. The BLM could include organizations within Kingman that have a strong connection with minority groups. These groups could help as volunteers on the project to create more diverse perspectives and a more versatile group of project participants/representation of leadership.
- **Outreach Strategies** can be developed to target and resonate with different minority communities and age groups. This may involve using multiple communication strategies, such as social media, community events, and local media outlets. Ensure that outreach materials are culturally sensitive and available in multiple languages.

3) Limitation: **Convenience sampling model.** This project utilized NAU students which is approximately 150 miles away from the Kingman survey sites and BLM Kingman Field Office. This made it difficult to have much variety in survey times and dates. We surveyed only in the daytime and missed some potentially popular days due to field technicians not having the availability/time to travel. My assumption is that groups of people (i.e. people who get off work at 6pm) were not represented in this project.

   Suggestion:

   - **Diversify Sampling Methods** alongside the convenience sampling. This could include random sampling or systematic sampling to ensure an

unbiased sample. Another option could be to create an online/mobile survey that can be scanned at the SRMA's. These mobile surveys could gather more information throughout different times of day when a field technician is absent.

4) Limitations: **Human resources, hiring practices, and surveying techniques** which may have led to discrepancies and errors in data collection, analysis, and output. The techniques used by NAU human resources of only hiring NAU undergraduate field-techs and paying less money than the project had budgeted, led to hire individuals from an unqualified pool of applicants who did not meet the requested minimum qualifications. Time constraints of project scheduling and training/onboarding were in conflict. Additionally, hand-written field logs to note refusals, onsite environmental conditions, and drive-by's. I believe the forementioned elements to lead to a high potential for human error.

   Suggestions:

   - **More training time and onboarding** between the BLM, UAF, and NAU. Given the hiring of unqualified field techs due to NAU practices additional measures would be needed to counterbalance their lack of experience. I suggest utilizing remote training sessions and onboarding procedures to ensure that field technicians are confident with the survey protocols, methodologies, and equipment. The use of virtual platforms for training sessions, providing detailed materials and hands-on exercises could be useful as well.

- **Clear communication channels** between field technicians and project supervisors. Utilize video conferencing, messaging apps, and regular check-ins to facilitate real-time communication, address questions/concerns, and provide timely feedback. * Recognizing the limitations of the suggestion - such as several of the data collection locations did not / do not have wifi or cellular connection due to their remote locations.
- **Mobile/electronic apps** used for field-logs, clocking-in, and logging hours spent in each specific SRMA's. For example, utilizing a second Survey123 to log field details more efficiently.

5) Limitation: **Limited and outdated language** within the survey language could have resulted in obtaining inaccurate and irrelevant responses. It also could create a non-inclusive atmosphere and project for both the survey participants and project team.

   Suggestions:

   - **Language review** of the existing survey questions. Identify outdated or limited language and potential areas of bias. Consider involving individuals from diverse backgrounds in the review process to ensure a range of perspectives.
   - **Pilot testing** of the revised survey questions with a sample group. This would allow feedback on the appropriateness of the language being used in the survey. Adjust the questions based on feedback and note effectiveness.

- **Update based on current knowledge and terminology.** Review current topics, updated academic literature, and other relevant sources to incorporate new terminology and concepts.

References

Ann E. Chapman (n.d.). *American Conservation in the Twentieth Century.* National Park Service. https://www.nps.gov/articles/000/american-conservation-in-the-twentieth-century.htm

Bureau of Land Management. (2013). *Recreation and Visitor Services Planning.* https://www.blm.gov/sites/blm.gov/files/uploads/IM2013-027_att1.pdf

Bureau of Land Management. (n.d.). *Kingman Field Office*. https://www.blm.gov/office/kingman-field-office

Bureau of Land Management. (2012). *Assessment, Inventory, and Monitoring (AIM)* https://www.blm.gov/policy/ib-2012-080

Bureau of Land Management. (n.d.). *Our Mission. https://www.blm.gov/about/our-mission*

Bureau of Land Management (2019). *Kingman Field Office Map- North.* https://www.blm.gov/documents/colorado-river-do/public-room/map/kingman-field-office-map-north

Bureau of Land Management (2019). *Kingman Field Office Map- South.* https://www.blm.gov/documents/colorado-river-do/public-room/map/kingman-field-office-map-south

Bureau of Land Management (2019). *Kingman Field Office - Cerbat Foothills Recreation Area Map.* https://www.blm.gov/documents/arizona-colorado-river-do/public-room/map/kingman-field-office-cerbat-foothills-recreation

Bureau of Land Management (n.d.). *About the BLM Oil and Gas Program.* https://www.blm.gov/programs/energy-and-minerals/oil-and-gas/about

Cahill, K., Collins, R., McPartland, S., Pitt, A., Verbos, R. (2018). *Overview of the Interagency Visitor Use Management Framework and the Uses of Social Science*

in its Implementation in the National Park Service. https://visitorusemanagement.nps.gov/Content/documents/IVUMC%20Framework%20and%20Uses%20of%20Social%20Science.pdf.

Chu EW, Karr JR. (2017). *Environmental Impact: Concept, Consequences, Measurement*. Reference Module in Life Sciences.

Department of Agriculture (n.d). *Limits of Acceptable Change, Red River Gorge process.* US Forest Service. https://www.fs.usda.gov/detail/dbnf/home/?cid=stelprdb5346360#Documents.

Department of the Interior (2016). *Bureau of Land Management Resource Management Planning*. Federal Register/ Vol. 81, No. 238.

English, D., White, E., Bowker, J., & Winter, S. (2020). *A Review of the Forest Service's National Visitor Use Monitoring (NVUM) Program*. Agricultural and Resource Economics

Graefe, A.R., Kuss, F.R., & Vaske, J.J. (1990). *Visitor impact management: a review of research.*

Hof, M., Lime, D., (1993). *Visitor Experience and Resource Protection Framework in the National Park System: Rationale, Current Status, and Future Direction.* USDI National Park Service. https://www.fs.usda.gov/research/treesearch/23907

Liddle, M.J. (1991). *Recreation ecology: Effects of human trampling on plants and corals.* Trends in Ecology*, Evolution and Systematics* 6:13–17

Miller, A., Blahna, D., Morse, W., Leung, Y., Rowland, M. (2022). *From recreation ecology to a recreation ecosystem: A framework accounting for social-ecological systems.* Outdoor Recreation and Tourism 38https://www.fs.usda.gov/pnw/pubs/journals/pnw_2022_miller001.pdf

National Archives (2022). *The Homestead Act.* Milestone Documents. https://www.archives.gov/milestone-documents/homestead-act#:~:text=The%20Homestead%20Act%2C%20enacted%20during,plot%20by%20cultivating%20the%20land

Patuxent Wildlife Research Center (n.d.). *Recreation Ecology*. https://www.usgs.gov/centers/pwrc/science/recreation-ecology?qt-science_center_objects=0#qt-science_center_objects

Public Lands Foundation (2014). *America's Public Lands: Origin, history, future*. Bureau of Land Management. https://publicland.org/wp-content/uploads/2016/08/150359_Public_Lands_Document_web.pdf

Robertson, R. (2016). *The relationships between leisure and happiness*. World Leisure Journal, 58:4, 242-244, DOI: 10.1080/16078055.2016.1225880

Shelby, B., & Heberlein, T. A. (1986). *Carrying capacity in recreation settings*. Oregon State University Press.

Stankey, H., McCool, F. (1984). *Carrying capacity in recreational settings: evolution, appraisal, and application.* Lei- sure Sciences. 6: 453-473

The Wilderness Society (n.d.). *Module 1: What do we mean by public lands?* https://www.wilderness.org/sites/default/files/media/file/Module%201%20-%20Reading.pdf

Toevs, G.R., J.J. Taylor, C.S. Spurrier, W.C. MacKinnon, and M.R. Bobo. (2011). *Bureau of Land Management Assessment, Inventory, and Monitoring Strategy: For integrated renewable resources management*. Bureau of Land Management, National Operations Center, Denver, CO.

United States Department of Agriculture (1987). *Bob Marshall Great Bear Scapegoat Recreation Management Direction. https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fseprd538805.pdf*

U.S. Department of the Interior (n.d.). *Clean Energy Future*. https://www.doi.gov/priorities/clean-energy-future

U.S. Dept. of Health and Human Services (2006). *The Research-Based Web Design & Usability Guidelines, Enlarged/Expanded edition*. Washington: U.S. Government Printing Office.

Utley, R., Mackintosh, B. (1989). *The Department of Everything Else. Highlights of Interior History*. National Park Service. http://npshistory.com/publications/doi/dept-everything-else.pdf

Wollstein, K. L. (2022). *Outcome-based management and federal rangeland administration: Reframing adaptive management on a complex institutional landscape.*

Appendix A

Focus Group Announcement Example:

BLM SEEKS PUBLIC INPUT ON PROPOSED BURRO CREEK EXPLORATION PROJECT

KINGMAN, Ariz. — The Bureau of Land Management (BLM)'s Kingman Field Office is seeking public input on a Preliminary Environmental Assessment of a proposed hard rock mining exploration project on public lands located near Wikieup, in Mohave County.

The Burro Creek Exploration Project Environmental Assessment analyzes the potential environmental impacts of an Exploration Plan of Operations submitted by Sitka Gold Corporation (Sitka) for their Burro Creek project, which is located near their current exploration site on privately owned land. The BLM welcomes public comments on the Environmental Assessment through July 27, 2022.

Sitka's proposal includes exploration drilling at 14 locations on BLM-managed public lands adjacent to their current exploration site. Drilling platforms would be constructed by hand on site, with wood and drilling equipment transported to the sites by helicopter. The surface disturbance areas are limited to the footprint of each pier supporting the wooden platforms, with each platform area measuring thirty-nine square feet, or less. The total surface disturbance of the proposed project is 0.01 acre of public land.

Under the proposal, reclamation would be performed with hand tools. Drill platforms would be dismantled, and the materials re-used at a new location during the project. Any rock piers constructed as platform foundations would be

deconstructed and the rocks moved to their original location from wooden platforms constructed by hand.

Additional details and a map can be found in the environmental assessment, located on the BLM's National NEPA register project webpage at https://eplanning.blm.gov/eplanning-ui/project/2017693/510.

The 30-day public comment period ends on July 27, 2022. Electronic comments may be submitted via the BLM's ePlanning website link shown above. Written comments may be submitted to BLM Kingman Field Office, 2755 Mission Blvd, Kingman, AZ 86401. If you would like to receive a hard copy of the environmental assessment, contact the BLM Kingman Field Office at 928-718-3700. If you have any project related questions, please contact Paul Misiaszek, Geologist, at pmisiasz@blm.gov, or at 928-718-3700.

Appendix B

Experience and Benefit Checklist

Appendix 2 – Experience and Benefit Checklist

Experience and Benefit Checklist

From which to Select or Craft Items for Visitor/Resident Customer Preference Studies and for Outcomes-Focused Recreation Management Objectives

(Moore and Driver 2005; Driver et al. 1991)

I. Visitor Experiences

A. Achievement/Stimulation
- ✓ Developing skills and abilities
- ✓ Gaining recognition from others for doing this
- ✓ Testing endurance
- ✓ Gaining a greater sense of self-confidence
- ✓ Being able to tell others about the trip

B. Autonomy/Leadership
- ✓ Experiencing a greater sense of independence
- ✓ Enjoying exploring on own
- ✓ Being in control of things that happen

C. Risk-Taking
- ✓ Enjoying risk-taking adventure

D. Equipment
- ✓ Talking to others about equipment

E./F./G. Family Togetherness/Similar People/New People
- ✓ Enjoying the closeness of friends and family
- ✓ Relishing group affiliation and togetherness
- ✓ Enjoying meeting new people with similar interests
- ✓ Enjoying participation in group outdoor events

H. Learn
- ✓ Learning more about this specific area
- ✓ Enjoying access to hands-on environmental learning
- ✓ Enjoying learning outdoor social skills

I. Enjoy nature
- ✓ Savoring the total sensory (sight, sound, and smell) experience of a natural landscape
- ✓ Enjoying easy access to natural landscapes

J. Introspection
- ✓ Enjoying ability to be more contemplative
- ✓ Reflecting on own character and personal values
- ✓ Thinking about and shaping own spiritual values
- ✓ Contemplating human's relationship with the land

K. Creativity
- ✓ Doing something creative
- ✓ Enjoying artistic expression of nature

L. Nostalgia
- ✓ Bringing back pleasant memories

M. Exercise/Physical Fitness
- ✓ Enjoying needed physical exercise
- ✓ Enjoying strenuous physical exercise
- ✓ Enjoying a wide variety of environments within a single park or recreation area
- ✓ Enjoying access to close-to-home outdoor amenities
- ✓ Enjoying ability to frequently participate in desired activities in preferred settings

N. Physical Rest
- ✓ Enjoying needed physical rest

O. Escape Personal/Social Pressures
- ✓ Releasing or reducing stress
- ✓ Escaping everyday responsibilities

P. Escape Physical Pressure
- ✓ Feeling good about solitude, isolation, and independence
- ✓ Enjoying an escape from crowds of people

Q. Social Security
- ✓ Being near more considerate people

R. Escape Family
- ✓ Getting away from family for awhile

S. Teach/Lead Others
- ✓ Enjoying teaching others about the outdoors

T. Risk Reduction
- ✓ Having others nearby who could help if needed
- ✓ Having a greater understanding about what will happen while here

II. Community Resident Experiences

A. Lifestyle
- ✓ Enjoying the hustle and bustle of new people in town
- ✓ Enjoying the peace and quiet of this small-town community
- ✓ Enjoying maintaining out-of-town country solitude
- ✓ Living a slower pace of life
- ✓ Avoiding compromising the quality of life here

B. Sense of Place
- ✓ Feeling like I belong to this community and liking it
- ✓ Avoiding outsiders making me feel alienated from my own community
- ✓ Observing visitors treating our community with respect
- ✓ Feeling that this community is a special place to live
- ✓ Just knowing this attraction is here, in or near my community

C. Personal/Character
- ✓ Nurturing my own spiritual values and growth
- ✓ Developing a greater understanding of outsiders

D. Interacting with People
- ✓ Appreciating personal interaction with visitors
- ✓ Enjoying telling visitors what makes this community a special place to live and work
- ✓ Encouraging visitors to help safeguard our lifestyle and quality of life
- ✓ Sharing our cultural heritage with new people
- ✓ Seeing visitors get excited about this area
- ✓ Communicating our cultural heritage with those already living here

E. Change
- ✓ Liking change and new growth here
- ✓ Knowing that things are not going to change too much

F. Stewardship and Hospitality
- ✓ Feeling good about the way our cultural heritage is being protected
- ✓ Feeling good about how visitors are being managed
- ✓ Feeling good about how natural resources and facilities are being managed
- ✓ Feeling good about how this attraction is being used and enjoyed

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I. Personal Benefits

A. Psychological

1. Better mental health and health maintenance
- ✓ A more holistic sense of wellness
- ✓ Restored mind from unwanted stress
- ✓ Diminished mental anxiety
- ✓ Improved mental well-being

2. Personal development and growth
- ✓ Greater self-reliance
- ✓ Confirmation/development of own values
- ✓ Improved academic and cognitive performance
- ✓ Improved sense of control over one's life
- ✓ Improved skills for outdoor enjoyment
- ✓ Improved skills for enjoying the outdoors alone
- ✓ Improved skills for outdoor enjoyment with others
- ✓ Improved leadership abilities
- ✓ Improved teamwork and cooperation
- ✓ Improved outdoor knowledge and self-confidence
- ✓ Improved outdoor recreation skills
- ✓ Deeper sense of personal humility
- ✓ More balanced competitive spirit
- ✓ Greater sensitivity to/awareness of outdoor aesthetics, nature's art, and its elegance
- ✓ Greater spiritual growth
- ✓ Increased capacity for artistic expression
- ✓ Improved ability to think things through and solve problems
- ✓ Increased adaptability
- ✓ Stronger ties with family and friends
- ✓ Greater sensitivity to/respect for other visitors
- ✓ Increased understanding and tolerance of others
- ✓ Greater respect for my cultural heritage
- ✓ Enhanced awareness and understanding of nature
- ✓ Greater environmental awareness and sensitivity
- ✓ Greater understanding of the importance of recreation and tourism in our community
- ✓ Better sense of my place within my community
- ✓ Improved ability to relate to local cultures
- ✓ More well-informed and responsible visitor
- ✓ Greater sense of responsibility for own quality of life
- ✓ Enlarged sense of personal accountability for acting responsibly on public lands

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- ✓ More well-informed and responsible visitor
- ✓ Greater sense of responsibility for own quality of life
- ✓ Enlarged sense of personal accountability for acting responsibly on public lands

- ✓ Enlarged understanding of personal responsibility to help care for community and keep it clean
- ✓ Improved sense of personal responsibility for control of domestic pets and livestock

3. Personal appreciation and satisfaction
   - ✓ Closer relationship with the natural world
   - ✓ A more outdoor-oriented lifestyle
   - ✓ Enhanced sense of personal freedom
   - ✓ Greater sense of personal security
   - ✓ Greater sense of adventure
   - ✓ Improved appreciation of nature's splendor
   - ✓ Improved opportunity to view wildlife closeup
   - ✓ Greater appreciation of the arts
   - ✓ Better understanding of wildlife's contribution to own quality of life
   - ✓ Greater freedom from urban living
   - ✓ Greater appreciation for my wildland and parkland heritage and how managers care for it
   - ✓ Greater personal enrichment through involvement with other people
   - ✓ Improved personal awareness, learning, and appreciation of others' cultural values
   - ✓ Increased acceptance of others who are different
   - ✓ Greater cultivation of natural resource stewardship ethic
   - ✓ Increased appreciation of area's cultural history
   - ✓ Greater awareness that this community is a special place
   - ✓ Better understanding of my community's cultural identity
   - ✓ Greater respect for private property and local lifestyles
   - ✓ An improved stewardship ethic towards adjoining/host communities
   - ✓ Improved understanding of how this community's rural-urban interface impacts its quality of life
   - ✓ Improved understanding of this/our community's dependence and impact on public lands

B. Psychophysiological
   - ✓ Improved physical fitness and health maintenance
   - ✓ Restored body from fatigue
   - ✓ Improved cardiovascular health
   - ✓ Reduced hypertension
   - ✓ Improved capacity for outdoor physical activity
   - ✓ Improved physical capacity to do my favorite recreation activities
   - ✓ Greater opportunity for people with different skills to exercise in the same place
   - ✓ Decreased body fat and obesity
   - ✓ Improved muscle strength and connective tissue
   - ✓ Increased lung capacity
   - ✓ Reduced incidence of disease

II. Household and Community Benefits

- ✓ Heightened sense of satisfaction with our community
- ✓ Greater household awareness of and appreciation for our cultural heritage
- ✓ More informed citizenry about where to go for different kinds of recreation experiences and benefits
- ✓ Reduced social isolation
- ✓ Improved community integration
- ✓ Improved functioning of individuals in family and community
- ✓ Greater family bonding
- ✓ Improved parenting skills
- ✓ More well-rounded childhood development
- ✓ Improved group cooperation
- ✓ Greater community involvement in recreation and other land use decisions
- ✓ Increased community involvement reducing erosion of our community's small-town, rural character
- ✓ Reduced numbers of at-risk youth
- ✓ Less juvenile delinquency
- ✓ Higher school/class attendance
- ✓ Lower school dropout rates
- ✓ More highly motivated students/improved scholarship
- ✓ Reduced social alienation
- ✓ Increased compassion for others
- ✓ Lifestyle improvement or maintenance
- ✓ Enhanced lifestyle
- ✓ Enlarged sense of community dependency on public lands
- ✓ Increased nurturance of others
- ✓ Increased independence/autonomy
- ✓ Greater interaction with visitors from different cultures
- ✓ Greater community valuation of its ethnic diversity

III. Economic Benefits

- ✓ Reduced health maintenance costs
- ✓ Increased work productivity
- ✓ Reduced absenteeism from work

- ✓ Decreased job turnover
- ✓ Improved local economic stability
- ✓ More positive contributions to local-regional economy
- ✓ Increased local tax revenue
- ✓ Increased local job opportunities
- ✓ Greater value-added local services/industry
- ✓ Increased desirability as a place to live or retire
- ✓ Enhanced ability for visitors to find areas providing wanted recreation experiences and benefits
- ✓ Maintenance of community's distinctive recreation/tourism market niche or character
- ✓ Increased local tourism revenue
- ✓ Greater diversification of local job offerings
- ✓ Increased property values
- ✓ Greater fiscal capacity to maintain essential infrastructure and services

IV. Environmental Benefits

- ✓ Greater retention of community's distinctive architecture and structures
- ✓ Maintenance of distinctive small-town atmosphere
- ✓ Maintenance of distinctive recreation setting character
- ✓ Improved maintenance of physical facilities
- ✓ Reduced looting and vandalism of historic/prehistoric sites
- ✓ Greater community ownership and stewardship of park, recreation, and natural resources
- ✓ Greater retention of distinctive natural landscape features
- ✓ Reduced wildlife harassment by recreation users
- ✓ Reduced wildlife disturbance from recreation facility development
- ✓ Reduced wildlife predation of domestic pets
- ✓ Greater protection of area historic structures and archaeological sites
- ✓ Sustainability of community's cultural heritage
- ✓ Improved respect for privately owned lands
- ✓ Improved care for community aesthetics
- ✓ Improved soil, water, and air quality
- ✓ Greater protection of fish, wildlife, and plant habitat from growth, development, and public use impacts
- ✓ Increased awareness and protection of natural landscapes
- ✓ Reduced negative human impacts such as litter, vegetative trampling, and unplanned trails
- ✓ Increased ecologically friendly tourism operations
- ✓ Reduced spread of invasive species such as plants, insects, and aquatic organisms
- ✓ Greater recycling
- ✓ Conservation of entire sustainable ecosystems

Appendix C

Field Tech Position Announcement

Project logistics/employment steps

SW Level 4- re-write.

Job description:

This position will support a Northern Arizona University grant-funded research project in the management, planning, and implementation of data collection for an Outcomes-Focused Management survey of recreation-related user groups within lands managed by the Bureau of Land Management (BLM) Kingman Arizona Field Office. Responsibilities will include, but not be limited to: Assisting in training of new hires, supervising field staff, scheduling field data collection, representing NAU in data collection interfacing with public sector, driving to/from designated field collection sites, and collaborating with federal agency employees and University faculty and staff as necessary to complete research data collection, reporting and presentation.

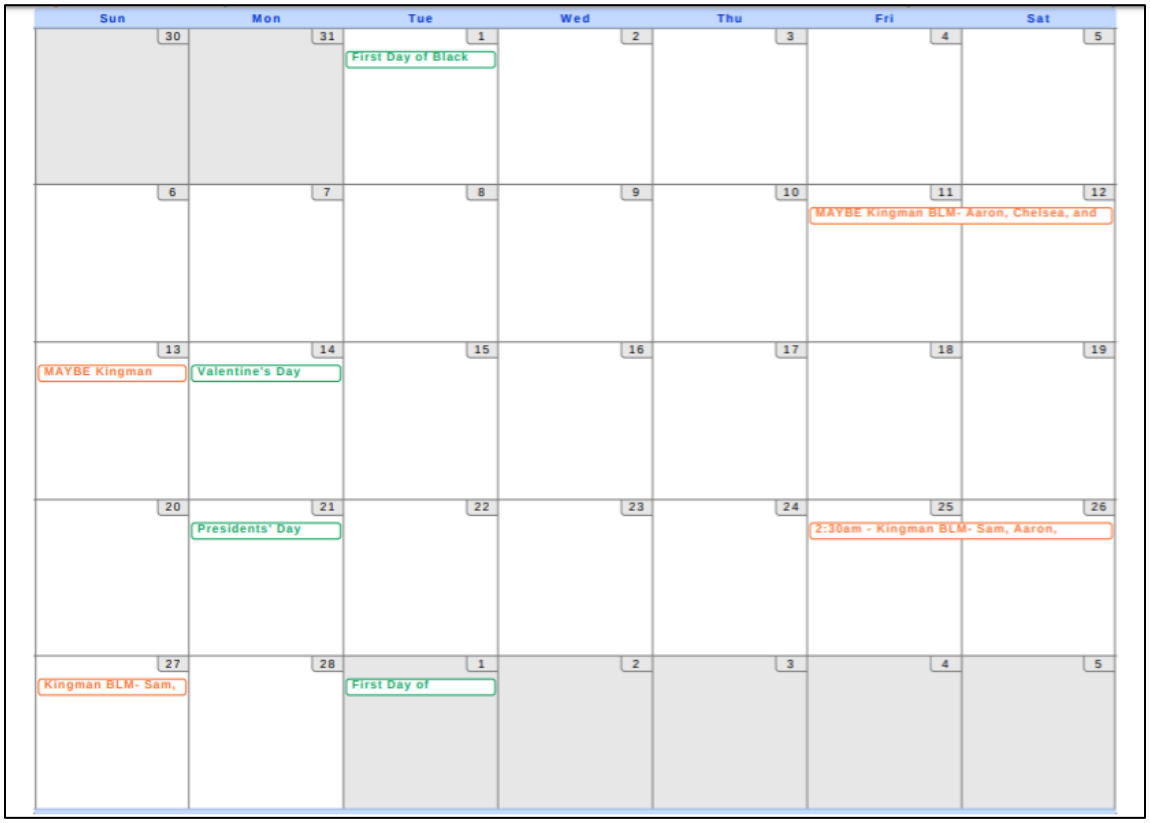
Minimum Qualifications:

- ***3 years of experience managing elements of parks and recreation resources, as demonstrated by either relevant education, employment, or a combination of both.***
- ***Supervisory or experience leading others in remote field settings, as demonstrated by education, employment, or a combination of both.***

- ***Manage positive public contact(s), data collection and social surveys in a research-related environment with minimal direct supervision, and the ability to supervise, train, and evaluate other student employees.***
- ***Operation of varied technologies as needed – GPS, Two-way Radio systems, Satellite Communications, and GIS Data Collection using Geoplatform or Survey123 types of interfacing software.***
- ***Ability to meet all requirements for driving Arizona State and Federal Agency fleet vehicles.***
- ***Medical Certification (Wilderness First Aid, Wilderness First Responder, or other similar training).***
- ***Ability to individually negotiate uneven and physically demanding environments and terrain without accommodations.***

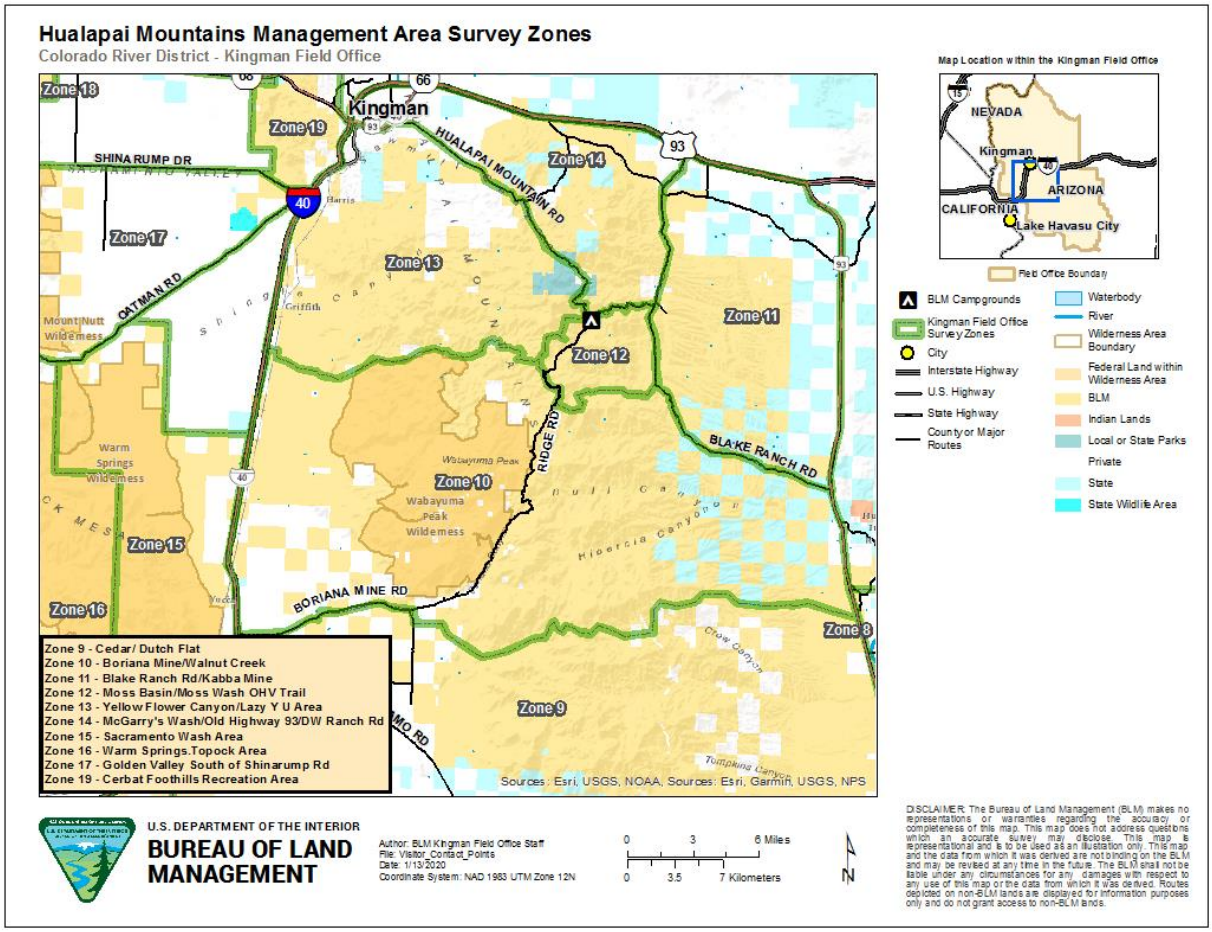
Appendix D

Survey Schedule



Appendix E

Zone Number	Zone Description
Zone 1	Arrastra Mountain/Wayside
Zone 2	Peoples (Peeples) Canyon
Zone 3	Aubrey Peak/Signal Area
Zone 4	17 Mile Rd/Signal Rd
Zone 5	Nothing/Suicide Wash
Zone 6	Burro Creek Crossing Rd/6 Mile Crossing
Zone 7	Bagdad/Scratch & Jerky Canyons
Zone 8	Sycamore Camp/Goodwin Mesa
Zone 9	Cedar/Dutch Flat
Zone 10	Boriana Mine/Walnut Creek
Zone 11	Blake Ranch Rd/Kabba Mine
Zone 12	Moss Basin/Moss Wash OHV Trail
Zone 13	Yellow Flower Canyon/Lazy Y U Area
Zone 14	McGarry's Wash/Old Highway 93/DW Ranch Rd
Zone 15	Sacramento Wash Area
Zone 16	Warm Springs Area
Zone 17	Golden Valley South of Shinarump Rd
Zone 18	Secret Pass/Moss Mine/Times Gulch Areas
Zone 19	Cerbat Foothills Recreation Area
Zone 20	Golden Valley North of SR 68
Zone 21	Mineral Park/Canyon Station
Zone 22	Truxton/Crozier Area
Zone 23	Clay Springs/North of Valentine
Zone 24	Hualapai Valley Including Red Lake
Zone 25	Mount Tipton/Vock Canyon
Zone 26	Chloride/Old Boulder Highway
Zone 27	South of Cottonwood Rd
Zone 28	North of Cottonwood Rd
Zone 29	Dolan Springs/Antelope Canyon
Zone 30	Temple Bar/Mount Wilson Area
Zone 31	Gold Basin Area
Zone 32	Hell's Canyon Area
Zone 33	Joshua Tree/Grandwash Cliffs Area


Hualapai Mountains Management Area Survey Zones
Colorado River District - Kingman Field Office
Kingman
HUALAPAI MOUNTAIN RD
SHINARUMP DR
OATMAN RD
BLAKE RANCH RD
RIDGE RD
BORIANA MINE RD
Mount Nutt Wilderness
Warm Springs Wilderness
Wabayuma Peak Wilderness
Zone 18
Zone 19
Zone 14
Zone 17
Zone 13
Zone 11
Zone 12
Zone 10
Zone 15
Zone 16
Zone 8
Zone 9
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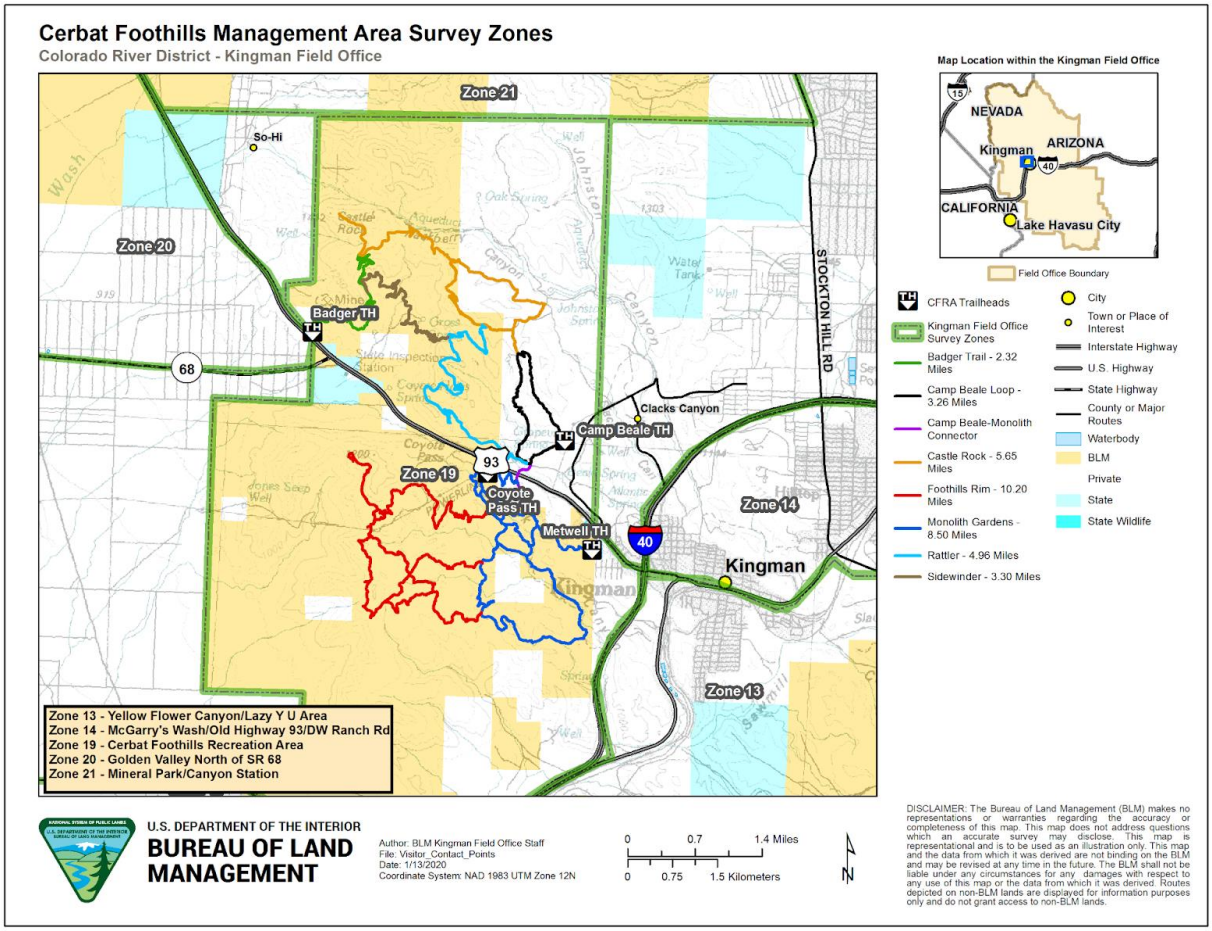
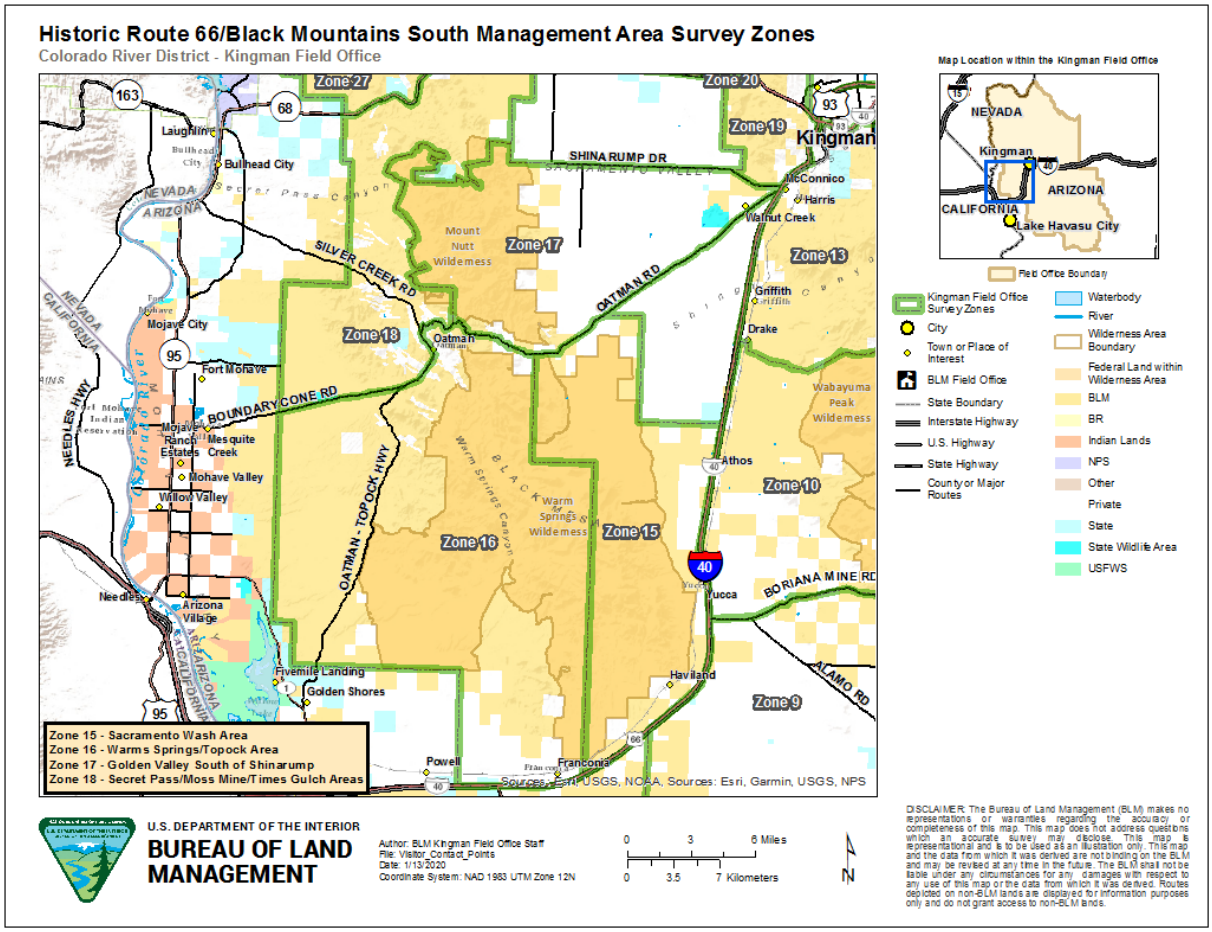
Zone 11 - Blake Ranch Rd/Kabba Mine
Zone 12 - Moss Basin/Moss Wash OHV Trail
Zone 13 - Yellow Flower Canyon/Lazy Y U Area
Zone 14 - McGarry's Wash/Old Highway 93/DW Ranch Rd
Zone 15 - Sacramento Wash Area
Zone 16 - Warm Springs.Topock Area
Zone 17 - Golden Valley South of Shinarump Rd
Zone 19 - Cerbat Foothills Recreation Area
Sources: Esri, USGS, NOAA, Sources: Esri, Garmin, USGS, NPS
Map Location within the Kingman Field Office
NEVADA
Kingman
ARIZONA
CALIFORNIA
Lake Havasu City
Field Office Boundary
BLM Campgrounds
Kingman Field Office Survey Zones
City
Interstate Highway
U.S. Highway
State Highway
County or Major Routes
Waterbody
River
Wilderness Area Boundary
Federal Land within Wilderness Area
BLM
Indian Lands
Local or State Parks
Private
State
State Wildlife Area
U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
Author: BLM Kingman Field Office Staff
File: Visitor_Contact_Points
Date: 1/13/2020
Coordinate System: NAD 1983 UTM Zone 12N
0 3 6 Miles
0 3.5 7 Kilometers
N
DISCLAIMER: The Bureau of Land Management (BLM) makes no representations or warranties regarding the accuracy or completeness of this map. This map does not address questions which an accurate survey may disclose. This map is representational and is to be used as an illustration only. This map and the data from which it was derived are not binding on the BLM and may be revised at any time in the future. The BLM shall not be liable under any circumstances for any damages with respect to any use of this map or the data from which it was derived. Routes depicted on non-BLM lands are displayed for information purposes only and do not grant access to non-BLM lands.


Cerbat Foothills Management Area Survey Zones
Colorado River District - Kingman Field Office
Zone 21
So-Hi
Zone 20
Badger TH
68
93
Zone 19
Coyote Pass TH
Metwell TH
Camp Beale TH
Clacks Canyon
Zone 14
40
Kingman
Zone 13
STOCKTON HILL RD
Zone 13 - Yellow Flower Canyon/Lazy Y U Area
Zone 14 - McGarry's Wash/Old Highway 93/DW Ranch Rd
Zone 19 - Cerbat Foothills Recreation Area
Zone 20 - Golden Valley North of SR 68
Zone 21 - Mineral Park/Canyon Station
Map Location within the Kingman Field Office
NEVADA
ARIZONA
Kingman
CALIFORNIA
Lake Havasu City
Field Office Boundary
CFRA Trailheads
Kingman Field Office Survey Zones
Badger Trail - 2.32 Miles
Camp Beale Loop - 3.26 Miles
Camp Beale-Monolith Connector
Castle Rock - 5.65 Miles
Foothills Rim - 10.20 Miles
Monolith Gardens - 8.50 Miles
Rattler - 4.96 Miles
Sidewinder - 3.30 Miles
City
Town or Place of Interest
Interstate Highway
U.S. Highway
State Highway
County or Major Routes
Waterbody
BLM
Private
State
State Wildlife
U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
Author: BLM Kingman Field Office Staff
File: Visitor_Contact_Points
Date: 1/13/2020
Coordinate System: NAD 1983 UTM Zone 12N
0 0.7 1.4 Miles
0 0.75 1.5 Kilometers
N
DISCLAIMER: The Bureau of Land Management (BLM) makes no representations or warranties regarding the accuracy or completeness of this map. This map does not address questions which an accurate survey may disclose. This map is representational and is to be used as an illustration only. This map and the data from which it was derived are not binding on the BLM and may be revised at any time in the future. The BLM shall not be liable under any circumstances for any damages with respect to any use of this map or the data from which it was derived. Routes depicted on non-BLM lands are displayed for information purposes only and do not grant access to non-BLM lands.


Historic Route 66/Black Mountains South Management Area Survey Zones
Colorado River District - Kingman Field Office
Zone 27
Zone 20
Zone 19
Kingman
SHINARUMP DR
Bullhead City
Laughlin
NEVADA
ARIZONA
CALIFORNIA
Mount Nutt Wilderness
Zone 17
SILVER CREEK RD
McConnico
Harris
Walnut Creek
Zone 13
OATMAN RD
Griffith
Drake
Mojave City
Zone 18
Oatman
Fort Mohave
BOUNDARY CONE RD
NEEDLES HWY
Mojave Ranch Estates
Mesquite Creek
Mohave Valley
Willow Valley
Wabayuma Peak Wilderness
Athos
Zone 10
Warm Springs Canyon
Warm Springs Wilderness
Zone 16
Zone 15
OATMAN - TOPOCK HWY
Needles
Arizona Village
Yucca
BORIANA MINE RD
Fivemile Landing
Golden Shores
Havilland
ALAMO RD
Zone 9
Powell
Franconia
Zone 15 - Sacramento Wash Area
Zone 16 - Warms Springs/Topock Area
Zone 17 - Golden Valley South of Shinarump
Zone 18 - Secret Pass/Moss Mine/Times Gulch Areas
Sources: Esri, USGS, NOAA, Sources: Esri, Garmin, USGS, NPS
Map Location within the Kingman Field Office
NEVADA
Kingman
ARIZONA
CALIFORNIA
Lake Havasu City
Field Office Boundary
Kingman Field Office Survey Zones
City
Town or Place of Interest
BLM Field Office
State Boundary
Interstate Highway
U.S. Highway
State Highway
County or Major Routes
Waterbody
River
Wilderness Area Boundary
Federal Land within Wilderness Area
BLM
BR
Indian Lands
NPS
Other
Private
State
State Wildlife Area
USFWS
U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
Author: BLM Kingman Field Office Staff
File: Visitor_Contact_Points
Date: 1/13/2020
Coordinate System: NAD 1983 UTM Zone 12N
0 3 6 Miles
0 3.5 7 Kilometers
N
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Appendix F

Field Log Examples

Field Log:

Please fill out a short separate page for each data collection date.

Items to include:

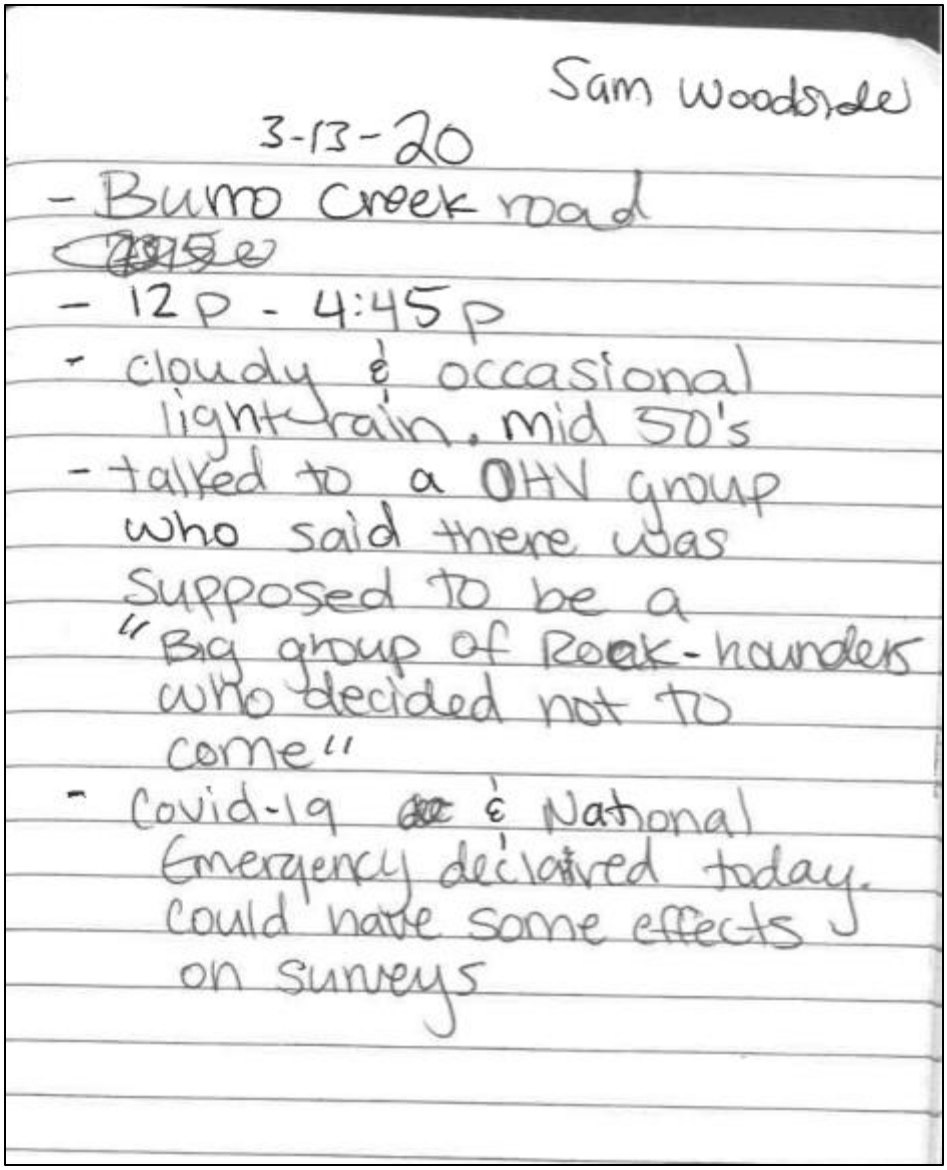
Your NAME and DATE

Location(s)/Trailhead(s), and hours spent at each site surveying

General Weather Observations

# of People UNDER age 18, you spoke with that could not participate, if any.

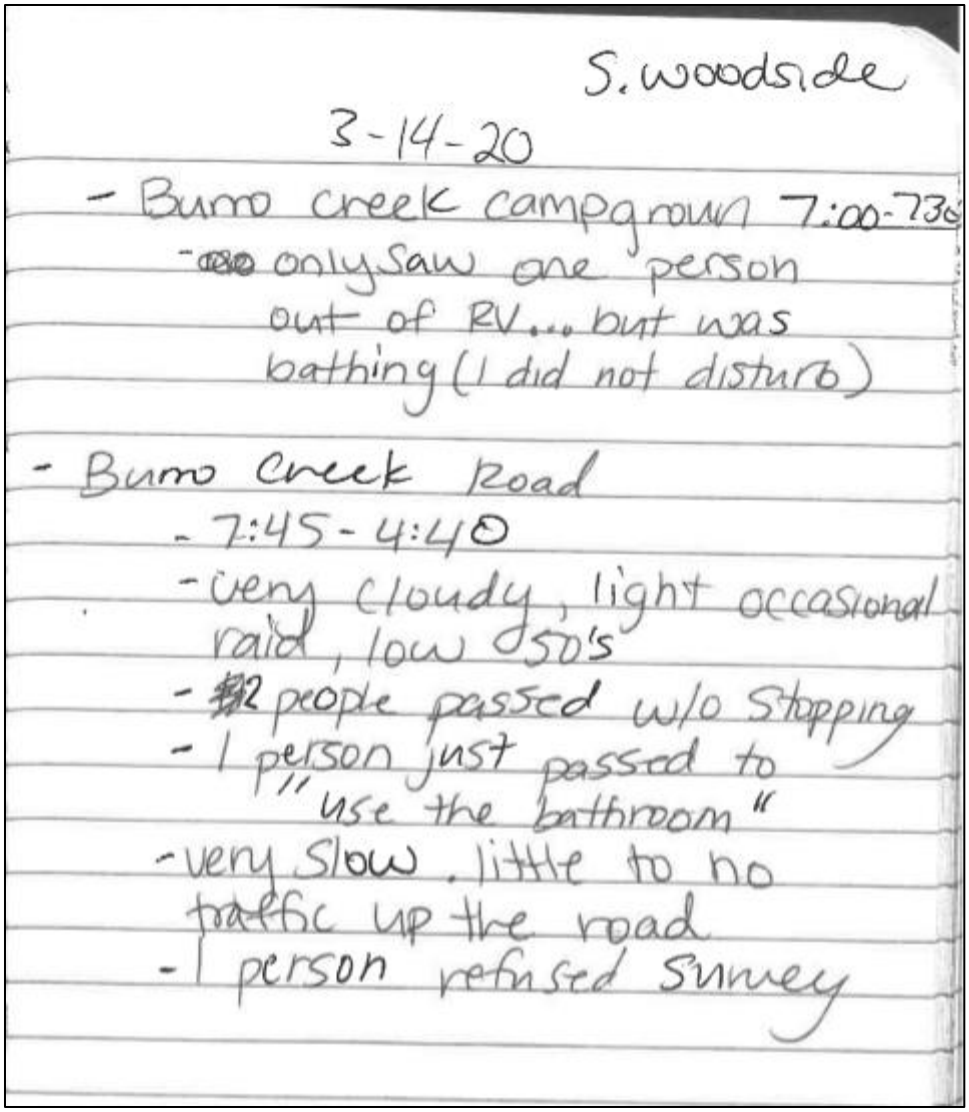
Any other general observations worth mention about site or interactions.



Sam Woodside

3-13-20

- Burro Creek road
- 12p - 4:45p
- cloudy & occasional light rain. mid 50's
- talked to a OHV group who said there was supposed to be a "Big group of Rock-hounders who decided not to come"
- Covid-19 & National Emergency declared today. Could have some effects on surveys

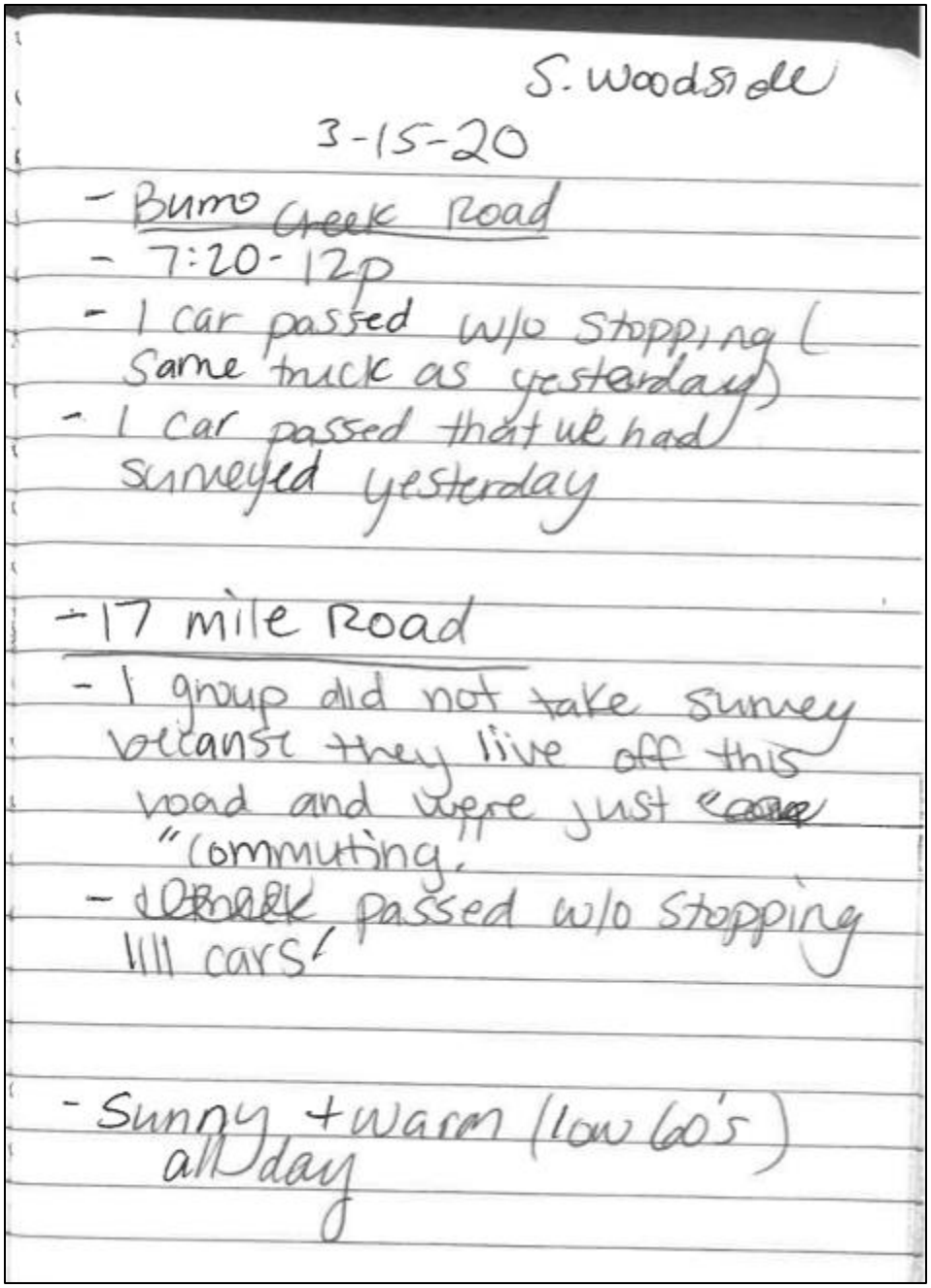


S. Woodside

3-14-20

- Burro creek campgroun 7:00-730
  - only saw one person out of RV... but was bathing (I did not disturb)

- Burro Creek Road
  - 7:45-4:40
  - very cloudy, light occasional raid, low 50's
  - ~~#2~~ people passed w/o Stopping
  - 1 person just passed to "use the bathroom"
  - very slow. little to no traffic up the road
  - 1 person refused survey



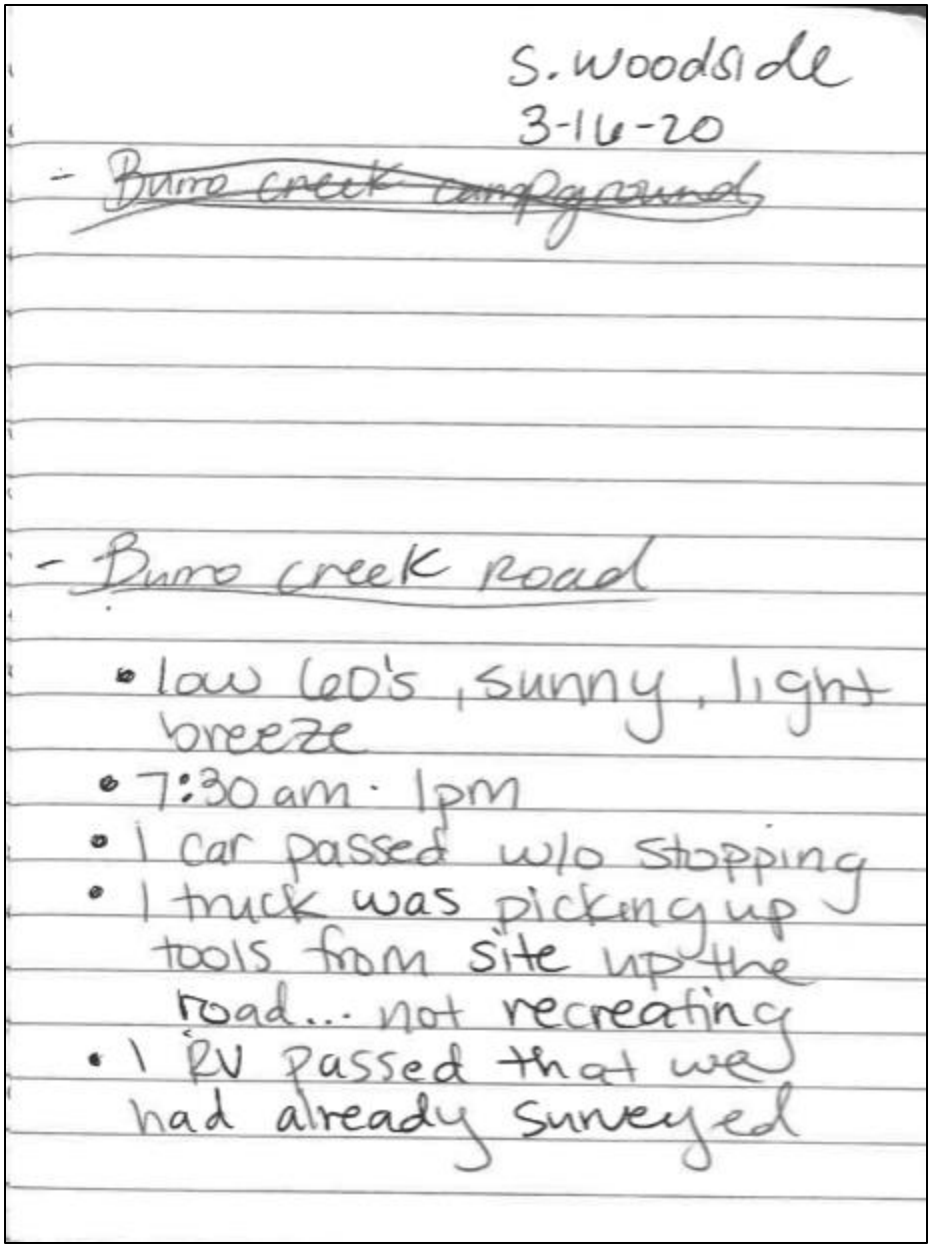
S. Woodside

3-15-20

- Burno Creek Road
- 7:20-12p
- 1 car passed w/o stopping (same truck as yesterday)
- 1 car passed that we had surveyed yesterday

- 17 mile Road
- 1 group did not take survey because they live off this road and were just "commuting."
- passed w/o stopping
IIII cars!

- Sunny + warm (low 60's) all day



S. Woodside
3-16-20

- ~~Burro creek campground~~

- Burro creek Road

  - low 60's, sunny, light breeze
  - 7:30 am - 1pm
  - 1 car passed w/o stopping
  - 1 truck was picking up tools from site up the road... not recreating
  - 1 RV passed that we had already surveyed

Appendix G

Initial On-Site Survey

Bureau of Land Management
Planning and Management for Recreation
Burro Creek On-Site Survey (Interactive interview with Research Assistant)

ID#:_____

1. *How many people are in your group today, including yourself?* _____(enter number)

2. *Which of the following statements best describes your visit to this area? (✓one)*
   - ☐ This area is the main destination for this trip.
   - ☐ This area is one of multiple other destinations for the trip.

3. *As shown on the included map, we have divided the Burro Creek Recreation Area into 10 recreation zones.*
Please check the boxes for all of the zones that you plan to or have visited during this trip:

☐ Zone 1: Arrastra Mountain/Wayside	☐ Zone 6: Burro Creek Crossing Rd/6 Mile Crossing
☐ Zone 2: Peoples (Peeples) Canyon	☐ Zone 7: Bagdad/Scratch & Jerky Canyons
☐ Zone 3: Aubrey Peak/Signal Area	☐ Zone 8: Sycamore Camp/Goodwin Mesa
☐ Zone 4: 17 Mile Rd/Signal Rd	☐ Zone 9: Cedar/Dutch Flat
☐ Zone 5: Nothing/Suicide Wash	☐ Zone 10: Boriana Mine/Walnut Creek

4. *If you plan to visit more than one zone, which zone do you consider to be your primary destination? (from map provided)*
   Zone # _____

5. *What activities did you participate in (or plan to participate in) during this trip to the Burro Creek Recreation Area.* (✓ all that apply) **Interviewer: show respondent list of activities.**

☐ Day hiking	☐ OHV riding	☐ Fishing
☐ Walking	☐ Hunting	☐ Rafting/canoeing/kayaking
☐ Trail running	☐ Target shooting	☐ Rock climbing
☐ Biking	☐ Recreational gold panning	☐ Photography
☐ Horseback riding	☐ Technical 4WD	☐ Bird watching
☐ Backpacking (overnight)	☐ Geocaching	☐ Watching wildlife
☐ Driving and sightseeing	☐ Rockhounding/Mineral Collection	☐ Visiting historical sites
☐ Camping		
☐ Other (*please list*):		

6. *Next, please tell me which activity from the list above is your primary activity for this visit.* (circle the activity box or write activity below)

_____

7. *What type of group are you with during this visit? (✓ one)*
   - ☐ I am visiting alone
   - ☐ Family only
   - ☐ Friends only
   - ☐ Family and friends
   - ☐ Organized Group (e.g., church, scouts, etc.)
   - ☐ Commercially outfitted group

8. *Surveyor, observe and record sex.* ☐ Male ☐ Female

9. *What year were you born?* _____

10. *What is your zip code (or country if you are not a U.S. resident)?* _____

Your Opinions Are Important to us!

Would you be willing to take home and complete a more detailed mail-back survey or complete the same survey on the internet? The results will help public land managers to improve the recreation opportunities at this site. Again, your participation in this study is completely voluntary. Your name, address and phone number (or name and email) will only be used to contact you for this study and will not be shared; your name will not be associated with your responses. We will send you a reminder in about 10 days. (*Are you willing to take a mail survey home and fill it out or complete an internet survey?)* Hand the clipboard to respondent to fill-in name and address (or name and email address), then provide with the mail survey, cover letter, map, and pre-paid postage envelope to take home.

Name (first and last) _____

Street Address _____

City _____ State _____ Zip Code_____

OR

Name (first and last) _____

Email Address _____

Thank you very much!

This information will be used by public land managers to better serve the public. Your response to this request is voluntary. No action may be taken against you for refusing to supply the information requested. Your name is requested for follow-up mailing purposes only. When analysis of the questionnaire is completed, all name and address files will be destroyed.

Office Use Only: Online Code: _____

Date_____ Time_____ Location (zone) _____ Staff Initials _____

Appendix H

Follow-up survey

Burro Creek Recreation Area
Visitor Survey

This project is being conducted by the University of Alaska Fairbanks (UAF), with cooperation from Northern Arizona University, and the Bureau of Land Management (BLM), Kingman Field Office. UAF has been working nationally with the BLM to increase efficiency in gathering information for recreation planning. We are conducting this survey to learn more about visitors to Burro Creek Recreation Area. Results will be presented to the Bureau of Land Management, Kingman Field Office, and will inform their forthcoming Resource Management Plan for the area. You must be 18 years old or older to complete this survey. Returning the survey will be considered your consent to participate.

If you have questions about your rights as a research participant, contact the University of Alaska Fairbanks Office of Research Integrity at 1-866-876-7800 or uaf-irb@alaska.edu.

If you have questions about the project, contact:

Peter Fix, Professor
Dept. of Natural Resources and Environment
University of Alaska Fairbanks
Fairbanks, AK 99775
(907) 474-6926
uaf-blm-survey@alaska.edu

Or

Aaron Divine, Principal Lecturer
Parks and Recreation Management Program
Dept. of Geography, Planning, and Recreation
Northern Arizona University
Flagstaff, AZ 86011
(928) 523-7835
aaron.divine@nau.edu

PART 1 - First, we would like to begin by asking you some questions about your recent visit to Burro Creek Recreation Area.

1. What type of overnight accommodations did you use while in the area? (*please ✓all that apply*)

☐ I live in the area and was visiting Burro Creek Recreation Area for the day (*go to Question 2*)
☐ I didn't stay overnight in the area (*go to Question 2*)
☐ Camped in a BLM designated campground
☐ Camped on BLM public lands (no campground)
☐ Camped in another public campground
☐ Camped on other public lands
☐ Commercial campground
☐ Hotel/motel/resort
☐ Other paid accommodations
☐ Friends or family
☐ Other (*please specify*): _____

1a. If you did stay overnight, how many nights did you stay? _____

1b. Where were the above accommodations located? (*please ✓ all that apply*)

☐ In Burro Creek Recreation Area
☐ Kingman
☐ Wikieup
☐ Bagdad
☐ Wickenburg
☐ Prescott
☐ Prescott National Forest
☐ Other (*please specify*): _____

2. Which of the following information sources did you use for this trip? First, check all the boxes that apply in section A. Next, for each information source you used, in section B circle how helpful each was.

	Section A – Used	**Section B – Helpfulness**				
	Used	Not at all	Slightly helpful	Moderately helpful	Very helpful	Extremely helpful
Map(s) of area	☐	1	2	3	4	5
Past personal experience	☐	1	2	3	4	5
Travel magazines	☐	1	2	3	4	5
Travel books/guides	☐	1	2	3	4	5
Visitor center - Powerhouse (not BLM)	☐	1	2	3	4	5
BLM office/visitor center	☐	1	2	3	4	5
BLM website	☐	1	2	3	4	5
Other website/social media	☐	1	2	3	4	5
Signs/roadside displays	☐	1	2	3	4	5
Rangers/BLM staff	☐	1	2	3	4	5
Commercial guides	☐	1	2	3	4	5
Friends/relatives	☐	1	2	3	4	5
Local business	☐	1	2	3	4	5
Other: _____	☐	1	2	3	4	5

PART 2 - Now we would like to ask you some questions about the zone that was your primary destination, past experience, and the recreation activities you participated in during your visit.

3. As shown on the included map, we have divided the survey area into 10 recreation zones. Please check the boxes for all of the zones that you visited during this trip. (*please ✓all that apply*)

- ☐ Zone 1: Arrastra Mountain/Wayside
- ☐ Zone 2: Peoples (Peeples) Canyon
- ☐ Zone 3: Aubrey Peak/Signal Area
- ☐ Zone 4: 17 Mile Rd/Signal Rd
- ☐ Zone 5: Nothing/Suicide Wash
- ☐ Zone 6: Burro Creek Crossing Rd/6 Mile Crossing
- ☐ Zone 7: Bagdad/Scratch & Jerky Canyons
- ☐ Zone 8: Sycamore Camp/Goodwin Mesa
- ☐ Zone 9: Cedar/Dutch Flat
- ☐ Zone 10: Boriana Mine/Walnut Creek

4. Which zone was the primary destination for this trip? _____

4a. If you were not able to visit your primary destination zone, please check the box below and tell us why - then skip to PART 5 of the survey.

☐ I was not able to visit my primary destination zone.

Why were you not able to visit your primary destination zone? _____

_____

_____

5. How long have you been visiting your primary destination zone? (*if this was your first visit, please enter 0*)

_____ year(s) and/or _____ month(s)

6. If this was not your first visit, how many times have you been to your primary destination zone in the last year? (*please ✓ box or enter number of visits*)

☐ This is my first visit or _____ visits

7. Please check each activity in which you participated in your primary destination zone during this trip. (*please ✓all that apply*)

- ☐ Day hiking
- ☐ Walking
- ☐ Trail running
- ☐ Biking
- ☐ Horseback riding
- ☐ Backpacking (overnight)
- ☐ Driving and sightseeing
- ☐ Camping
- ☐ OHV riding
- ☐ Hunting
- ☐ Target shooting
- ☐ Recreational gold panning
- ☐ Technical 4WD
- ☐ Geocaching
- ☐ Rockhounding/Mineral Collection
- ☐ Fishing
- ☐ Rafting/canoeing/kayaking
- ☐ Rock climbing
- ☐ Photography
- ☐ Bird watching
- ☐ Watching wildlife
- ☐ Visiting historical sites
- ☐ Other (*please list*): _____

8. From the activities marked in question 7, which one was your primary activity in your primary destination zone?

_____

9. About how many times have you participated in your primary activity over the past 12 months?

_____ time(s)

10. In your primary destination zone, which of the following did you visit during this trip? (*please ✓all that apply*)

- ☐ Burro Creek
- ☐ Burro Creek Campground
- ☐ Six Mile Crossing
- ☐ Arrastra Mountain Wilderness
- ☐ Upper Burro Creek Wilderness
- ☐ Kaiser Canyon (Warm Springs)
- ☐ Big Sandy River
- ☐ Alamo Lake State Park
- ☐ Aubrey Peak Wilderness
- ☐ Other (*please list*): _____

PART 3 - Now we would like to ask you some questions about the experiences and benefits you received from your visit to your primary destination zone (as indicated in question 4) and primary activity (as answered in question 8).

11. Overall, how satisfied were you with your visit to your primary destination zone? (*circle one*)

Very dissatisfied	Somewhat dissatisfied	Neutral	Somewhat satisfied	Very satisfied
1	2	3	4	5

12. To what extent did each of the following contribute to your satisfaction while visiting your primary destination zone? (*circle one number for each*)

	Contribution to satisfaction…				
	Not at all	Low	Moderate	High	Very high
a. The natural places (e.g., mountains, streams)	1	2	3	4	5
b. The historic or cultural places	1	2	3	4	5
c. The recreation activities (e.g., four-wheeling, hiking)	1	2	3	4	5
d. The ability to participate in group activities	1	2	3	4	5
e. The towns (e.g., Kingman, Wikieup, other)	1	2	3	4	5
f. The opportunity for solitude	1	2	3	4	5
g. Wilderness values	1	2	3	4	5
h. Ability to access your destination(s)	1	2	3	4	5

13. We would like to know about your experiences in your primary destination. **First**, indicate how desirable each of the following experiences was to you as you made the decision to take this trip. **Then**, rate the degree to which you were able to attain each experience during the trip to your primary destination zone. *(circle appropriate numbers for the experience's desirability to you and your level of attainment)*

Desirability to you					Personal experiences	Your level of attainment				
Not at all	Low	Moderate	High	Very high		Not at all	Low	Moderate	High	Very high
1	2	3	4	5	Developing your skills and abilities	1	2	3	4	5
1	2	3	4	5	Enjoying the area's wildlife	1	2	3	4	5
1	2	3	4	5	Bringing your family closer together	1	2	3	4	5
1	2	3	4	5	Being with friends	1	2	3	4	5
1	2	3	4	5	Experiencing the natural surroundings	1	2	3	4	5
1	2	3	4	5	Learning more about the Burro Creek Recreation Area	1	2	3	4	5
1	2	3	4	5	Getting physical exercise	1	2	3	4	5
1	2	3	4	5	Experiencing adventure and excitement	1	2	3	4	5
1	2	3	4	5	Releasing or reducing some built-up mental tensions	1	2	3	4	5
1	2	3	4	5	Escaping everyday responsibilities for a while	1	2	3	4	5
1	2	3	4	5	Enjoying the solitude	1	2	3	4	5
1	2	3	4	5	Gaining a greater sense of self-confidence	1	2	3	4	5
1	2	3	4	5	Enjoying the scenery	1	2	3	4	5
1	2	3	4	5	Being contemplative	1	2	3	4	5
1	2	3	4	5	Testing my equipment	1	2	3	4	5
1	2	3	4	5	Reducing stress	1	2	3	4	5
1	2	3	4	5	Enjoying teaching others about the outdoors	1	2	3	4	5
1	2	3	4	5	Enjoying risk-taking adventure	1	2	3	4	5
1	2	3	4	5	Being with others who enjoy the same things I do	1	2	3	4	5

Recreation taking place in Burro Creek Recreation Area can result in benefits that occur beyond the recreation area. Such benefits could be attained by:

- you personally,
- your household, and
- communities in the area (e.g., Kingman, Wikieup, Bagdad, Wickenburg).

We are also interested in understating these benefits.

14. Below are benefits that you and your household may have received from your recent trip to Burro Creek Recreation Area. **First**, please indicate how desirable it was to you that the following benefits result from this trip to your primary destination zone, as indicated in question 4. **Second**, rate the degree to which you and your household were able to attain each benefit as a result of your recent trip. ***(circle appropriate numbers for the benefit's desirability to you, and for your and your household's level of attainment)***

Desirability to you						**Your level of attainment**				
Not at all	Low	Moderate	High	Very high	**Benefits to you**	Not at all	Low	Moderate	High	Very high
1	2	3	4	5	Rest from mental stress/tension/anxiety	1	2	3	4	5
1	2	3	4	5	Improved physical fitness	1	2	3	4	5
1	2	3	4	5	Improved/maintained health	1	2	3	4	5
1	2	3	4	5	Enhanced sense of personal freedom	1	2	3	4	5
1	2	3	4	5	Improved self-confidence	1	2	3	4	5
1	2	3	4	5	A more outdoor-oriented lifestyle	1	2	3	4	5
1	2	3	4	5	Stronger ties with my family	1	2	3	4	5
1	2	3	4	5	Stronger ties with my friends	1	2	3	4	5
1	2	3	4	5	Improved ability to relate to local residents and their culture	1	2	3	4	5
1	2	3	4	5	Increased appreciation of the area's cultural history	1	2	3	4	5
1	2	3	4	5	Closer relationship with natural world	1	2	3	4	5
1	2	3	4	5	Greater self-reliance	1	2	3	4	5
1	2	3	4	5	Improved sense of control over my life	1	2	3	4	5
1	2	3	4	5	Greater freedom from urban living	1	2	3	4	5
1	2	3	4	5	Increased personal accountability to act responsibly on public lands	1	2	3	4	5
1	2	3	4	5	Greater aesthetic appreciation	1	2	3	4	5

14a. ***Note**: In some situations (you are traveling alone, or perhaps "household" does not apply to your living situation) some benefits might not be relevant. In that case, treat "not at all" as "not applicable (NA)".*

Desirability to your household					**Benefits to your household**	**Your household's attainment**				
Not at all (NA)	Low	Moderate	High	Very high		Not at all (NA)	Low	Moderate	High	Very high
1	2	3	4	5	Strengthened relationships with family	1	2	3	4	5
1	2	3	4	5	Improved health	1	2	3	4	5
1	2	3	4	5	Greater recreation opportunities for my family	1	2	3	4	5
1	2	3	4	5	Greater appreciation for our cultural heritage	1	2	3	4	5
1	2	3	4	5	Greater awareness and appreciation of natural landscapes	1	2	3	4	5
1	2	3	4	5	More well-rounded development for my children	1	2	3	4	5
1	2	3	4	5	Increased work productivity	1	2	3	4	5
1	2	3	4	5	Greater family bonding	1	2	3	4	5
1	2	3	4	5	Reduced health maintenance costs	1	2	3	4	5
1	2	3	4	5	Greater awareness of methods to minimize recreation impacts	1	2	3	4	5
1	2	3	4	5	Improved parenting skills	1	2	3	4	5

14b. Below are benefits that local communities may have received from recreation taking place in Burro Creek Recreation Area. **First**, please indicate how desirable it was to you that the following benefits result from recreation taking place in the recreation area. **Second**, rate the degree to which the benefits were attained by the local communities/region. *(circle appropriate numbers for the benefit's desirability to you, and your perception of communities/region's attainment)*

Note: *If you feel you do not have enough information to determine the local communities' level of attainment, circle "dk."*

Desirability to you					**Community, environmental, and economic benefits**	**Local communities' attainment**					
Not at all	Low	Moderate	High	Very high		Not at all	Low	Moderate	High	Very high	DK
1	2	3	4	5	Improved desirability as a place to live	1	2	3	4	5	dk
1	2	3	4	5	Greater community engagement in recreating on public lands	1	2	3	4	5	dk
1	2	3	4	5	Heightened sense of community pride	1	2	3	4	5	dk
1	2	3	4	5	Improved desirability as a place to retire	1	2	3	4	5	dk
1	2	3	4	5	Increased awareness and protection of natural landscapes	1	2	3	4	5	dk
1	2	3	4	5	Greater protection of fish, wildlife, and plant habitat from growth, development, and public use impacts	1	2	3	4	5	dk
1	2	3	4	5	Increased local work productivity	1	2	3	4	5	dk
1	2	3	4	5	Increased local tourism revenue	1	2	3	4	5	dk
1	2	3	4	5	Greater community stewardship of recreation and natural resources	1	2	3	4	5	dk
1	2	3	4	5	Maintenance/preservation of distinctive public-land recreation character	1	2	3	4	5	dk
1	2	3	4	5	Maintenance/preservation of distinctive community atmosphere	1	2	3	4	5	dk
1	2	3	4	5	Improved respect for privately-owned lands	1	2	3	4	5	dk
1	2	3	4	5	Reduced local health maintenance cost	1	2	3	4	5	dk

PART 4 - Now we would like to ask you to provide some evaluations and share your preferences about the recreation settings, facilities and management provided in your primary destination zone.

15. For your primary destination zone, please indicate your preference for how each of the following recreation features should be managed. Please base your answer on the condition of the feature that would best enhance the experience and benefits you desire. *(please ✓ one answer for each of the nineteen features)*

1. Remoteness:	☐ Improve ease of access to area	☐ Leave as is	☐ Make area more isolated
2. Naturalness:	☐ Allow more man-made landscape alterations	☐ Leave as is	☐ Make a more natural appearing area
3. Facilities:	☐ Remove some facilities (e.g., restrooms)	☐ Leave as is	☐ Develop more facilities (e.g., restrooms)
4. Campgrounds:	☐ Reduce campgrounds	☐ Leave as is	☐ Create/provide more campgrounds
5. Visitor information:	☐ Provide fewer maps and brochures	☐ Leave as is	☐ Provide more maps and brochures
6. Directional signs:	☐ Reduce/limit directional signs	☐ Leave as is	☐ Provide more directional signs
7. Foot trails:	☐ Reduce/limit foot trails	☐ Leave as is	☐ Create/allow more foot trails
8. Bike trails:	☐ Reduce/limit mountain bike trails	☐ Leave as is	☐ Create/allow more mountain bike trails
9. Motorized routes:	☐ Reduce/limit motorized routes	☐ Leave as is	☐ Create/allow more motorized routes
10. Group size:	☐ Limit the group size allowed	☐ Leave as is	☐ Provide for larger groups
11. Contacts:	☐ Lower interaction with others	☐ Leave as is	☐ Allow more interaction with others
12. Evidence of use:	☐ Rehab and reduce signs of others' use	☐ Leave as is	☐ Allow more evidence of other visitors
13. Visitor services:	☐ Reduce services, staff contact, and assistance	☐ Leave as is	☐ Provide more services, staff contact, and assistance
14. Interpretive signs:	☐ Reduce/limit interpretive signs	☐ Leave as is	☐ Provide more interpretive signs
15. BLM staff presence:	☐ Reduce/limit BLM staff presence	☐ Leave as is	☐ Provide more BLM staff presence
16. Management control:	☐ Use a more "hands-off" management style	☐ Leave as is	☐ Exercise more visitor and land use controls
17. Availability of guides/outfitters:	☐ Reduce/limit number of guides/outfitters	☐ Leave as is	☐ Provide/allow for more guides/outfitters
18. Marketing focus:	☐ Focus more on bringing in more local visitors	☐ Leave as is	☐ Focus more on national/international visitors
19. Route and/or trail management and maintenance:	☐ Increase obstacles and challenge of routes	☐ Leave as is	☐ Remove obstacles and challenges, widen routes

16. Please rate the quality of each of the following items that you observed in your primary destination zone on this trip. (*circle the most appropriate answer or ✓ did not observe*)

For these facilities:	***The quality was…***					
	Poor	Low	Moderate	High	Very high	Did not observe
Developed campgrounds	1	2	3	4	5	☐
Restroom facilities	1	2	3	4	5	☐
Access to BLM staff	1	2	3	4	5	☐
Interpretive signs/panels	1	2	3	4	5	☐
Organized tour opportunities	1	2	3	4	5	☐
Informational Kiosks	1	2	3	4	5	☐
River access	1	2	3	4	5	☐
Trails	1	2	3	4	5	☐
Roads	1	2	3	4	5	☐
BLM provided information (e.g., trail markers and maps)	1	2	3	4	5	☐
Directional/informational signs/panels	1	2	3	4	5	☐
Motorized access roads	1	2	3	4	5	☐

PART 5 – This section asks questions about your overall trip to Burro Creek Recreation Area.

17. Please estimate the amount of money you (and other members of your party) spent for your entire trip within 50 miles of Burro Creek Recreation Area. (*enter the amount for each category*)

For **local residents** (e.g., Kingman, Wikieup, Bagdad, Wickenburg), enter the amount spent specifically for this trip beyond what you normally would have spent (on food, etc.) during that time.

Seasonal residents (> 2 months in Mojave County) follow instructions for local residents.

Non-local visitors, include all spending within 50 miles of Burro Creek Recreation Area during your entire visit to the area.

Motel, lodge, cabin, bed & breakfast, etc.	$_____
Camping	$_____
Restaurants and bars	$_____
Groceries	$_____
Gasoline and oil	$_____
Local transportation (bus, shuttles, etc.)	$_____
Entry, parking or recreation use fees	$_____
Recreation and entertainment (include commercially guided tours, equipment rental)	$_____
Sporting good purchases	$_____
Souvenirs, clothing, and other miscellaneous	$_____
Other (*please specify*): _____	$_____

18. Overall, how satisfied were you with your visit to Burro Creek Recreation Area? (*circle one*)

Very dissatisfied	Somewhat dissatisfied	Neutral	Somewhat satisfied	Very satisfied
1	2	3	4	5

19. To what extent did each of the following contribute to your satisfaction while visiting Burro Creek Recreation Area? (*circle one number for each*)

	Contribution to satisfaction…				
	Not at all	Low	Moderate	High	Very high
a. The natural places (e.g., mountains, streams)	1	2	3	4	5
b. The historic or cultural places	1	2	3	4	5
c. The recreation activities (e.g., four-wheeling, hiking)	1	2	3	4	5
d. The ability to participate in group activities	1	2	3	4	5
e. The towns (e.g., Kingman, Wikieup, other)	1	2	3	4	5
f. The opportunity for solitude	1	2	3	4	5
g. Wilderness values	1	2	3	4	5
h. Ability to access your destination(s)	1	2	3	4	5

20. As you think about your primary destination zone and the Burro Creek Recreation Area where you received this survey, what is/are the most important improvement(s) that recreation managers could make to enhance your visits in the future? (*if you have any suggestions, please write your response below*)

_____

_____

_____

_____

_____

PART 6 - The final section asks for some background information about you and your household. All information you give in this survey is optional and anonymous. None of the information you submit will be linked to you in any way. Results may be used by the Bureau of Land Management to, for example, think about the potential impact of fees, find out if visitors to the area are representative of local communities, and to look at trends over time.

21. What is your sex? (*please ✓ one*)

☐ Male ☐ Female ☐ Intersex ☐ Prefer not to answer

22. With which gender identity do you most identify? (*please ✓all that apply*)

☐ Male
☐ Female
☐ Transgender
☐ Non-binary / non-conforming
☐ Prefer to self-describe_____
☐ Prefer not to answer

23. What is your age? _____ ☐ Prefer not to answer

24. Please indicate the highest level of education you have attained. (*please ✓ one*)

☐ Less than a high school diploma
☐ High school diploma or GED
☐ Technical/vocational degree beyond high school
☐ Some college/vocational
☐ 4-year college degree
☐ Advanced degree beyond 4-year college degree
☐ Prefer not to answer

25. Do you consider yourself to be Hispanic or Latino/a/x (*please ✓ one*)

☐ Yes ☐ No ☐ Prefer not to answer

25a. With which racial group(s) do you identify? (*please ✓all that apply*)

☐ American Indian or Alaska Native
☐ Asian
☐ Black or African American
☐ Native Hawaiian or other Pacific Islander
☐ White
☐ Prefer not to answer

26. Which of the following broad categories best describes your total annual household income for the last calendar year? (*please ✓ one*)

☐ $25,000 or less
☐ $25,001 – $50,000
☐ $50,001 – $75,000
☐ $75,001 – $100,000
☐ $100,001 – $125,000
☐ $125,001 – $150,000
☐ More than $150,000
☐ Prefer not to answer

27. What is the zip code of your current residence, or country if you do not reside in the U.S.?

U.S. zip code: _____ **Or** Country (if not U.S. resident):_____ ☐ Prefer not to answer

Thank you for your participation!!!

Please return the survey in the postage paid return envelope.
If you have additional comments, please write them in space on right.

ID#: _____
(used to keep track of responses in place of a name; your identity will not be linked to the survey)